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Original Articles

AN EPIDEMIC PNEUMOCOCCIC CATARRHAL DISEASE.*

CLINICAL STUDY.

HARVEY G. BECK, M.D.

BACTERIOLOGIC STUDY.

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BALTIMORE.

CLINICAL STUDY.

INTRODUCTORY.

It may appear presumptuous to insert the word "pneumococcic" in the title of a paper which has to deal largely with a disease or condition with local manifestations involving the mucous membrane of the upper air passages and conjunctivæ, because recent investigations tend to show that these anatomic situations are a normal habitat of the pneumococcus. It is, therefore, with a considerable degree of reserve that this title has been adopted, even after coupling a definite clinical picture with the persistent presence of an overwhelming number of pneumococci characterizing this series of cases. It is, of course, impossible to make a numerical division as to what constitutes a normal or an abnormal invasion of pneumococci in the mucous membrane of the eye, nose and throat. Therefore, we do not regard the increase in the number of these organisms, even though it be enormous, of sufficient importance to warrant our conclusions, but when this is associated with a definite underlying pathologic basis and distinct clinical features we feel justified in reporting this series of cases under this caption.

REVIEW OF LITERATURE.

In a cursory review of the literature we find that epidemic pneumococcic conjunctivitis has been described in a special article by Axenfeld.[1] We also find a description of pneumococcic fibrinous pharyngitis by Bissell, and pneumococcic pseudomembranous bronchitis by Landrieux and Triboulet.[2] If the conditions these observers described correspond with our present epidemic then they failed to comprehend the entire clinical picture and merely presented single aspects of the disease.

Davis of Chicago[3] intimates that acute catarrhal conditions resembling grippe might possibly be caused by the pneumococcus, but does not furnish clinical and bacteriologic proof of the assumption.

Samuel J. Darling, pathologist, Ancon Hospital, Panama,[4] examined the accessory nasal sinuses in thirty-seven autopsies in which death was due to pneumococcus infection. Ninety-two per cent. of the cadavers showed involvement of one or more of these sinuses. Thirteen cases of pneumococcus meningitis were studied. All of these cadavers presented an inflammation of the sinuses, and in every one the middle ear and mastoid were normal. The inflammation was usually intense, fibrinopurulent in character, and apparently antedated the general infection. In all of his cases the pneumococci were found in abundance. He also found a pneumococcus sinusitis in 28 per cent. of the control cases in none of which death was due to pneumococcus infection.

Darling believes that the portal of entry of the pneumococcus is in most instances an accessory nasal sinus, the mucous membrane in the sinus becoming infected through a previous rhinitis.

I mention these investigations of Darling's because his observations and the study of our cases establish the fact that there is undoubtedly a direct line of invasion by the pneumococcus beginning in the upper air passages, frequently involving the accessory sinuses which may ultimately lead to the development of pneumonia, pneumococcus meningitis, endocarditis, septicemia, etc.

STUDY OF EPIDEMIC.

Two years ago this spring there occurred in my practice in Baltimore a curious catarrhal condition which I regarded at the time as epidemic in nature. It differed essentially from ordinary colds in that it was apparently not the result of exposure and it affected almost invariably more than one member in a family and sometimes entire families. Last year no such case came under my observation.

In March of this year my attention was again directed to the same condition. My interest was aroused, after being summoned within one week to three families, in which either the entire family or several members of a family were similarly affected. Since then many other cases have come under my care which have enabled me to make a careful study of the affection from a clinical standpoint, and have furnished Dr. Stokes, who kindly offered to make a bacteriologic investigation, an opportunity to study the epidemic from an etiologic standpoint. In this work Dr. Stokes was assisted by A. E. Winlack and D. G. Preston, students at the College of Physicians and Surgeons.

As the following notes will show, these cases may be looked on clinically as measles without a rash, as conjunctivitis with general catarrhal symptoms, as whooping cough without a whoop or as grippe without mental or physical depression. Since this group of cases presents a definite clinical picture—a symptom-complex not exactly corresponding to the familiar epidemic diseases—it appears to me not at all improbable that the epidemic is an affection having a distinct entity.

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

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1. Kölle and Wassermann: Bacteriology.
2. Rev. gen. de clin. et de therap., Paris, 1896, x, 97.
3. THE JOURNAL A. M. A., May 11, 1907.
4. THE JOURNAL A. M. A., Nov. 10, 1907.

This report is based on the clinical study of fifty-six cases, of which thirty-three were examined bacteriologically. I shall give the histories in full of a few of the most typical family groups of cases showing house infection, one case of the severest type of the disease, and follow these by a summary of the entire series:

GROUP 1.—My first experience was with the G. family, consisting of six members, all of whom were affected; father aged 42, mother 34, Pearl 18, Urban 6, Alfred 5, and baby 10 months. March 13, 1907, I was called in to see the baby, who was thought to be suffering from whooping-cough. The child had had none of the acute infectious diseases. Alfred and Urban had had whooping-cough one year ago. Alfred

Fig. 1.—Dr. Friedenwald's patient, showing purulent conjunctivitis and swelling of upper eyelids.

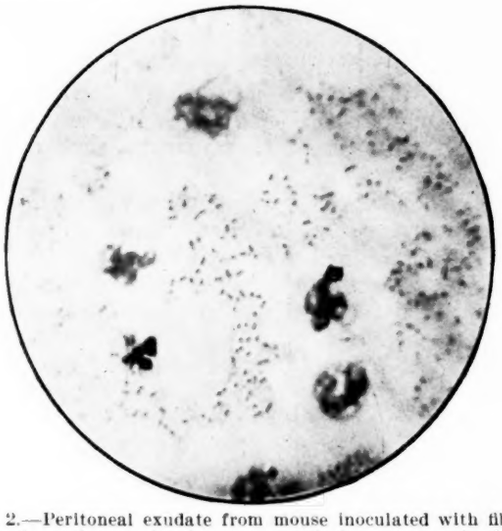

Fig. 2.—Peritoneal exudate from mouse inoculated with fibrinous exudate from throat, showing many typical pneumococci with capsules. The photomicrographs were all made by Dr. T. M. Wright, of the City Health Department.

was the first one in the family affected with this catarrhal condition. The others, except Urban, were affected three days later. Alfred did not remember having played with children similarly affected, before he was taken sick. Later, two children in the M. family, living in the same block, developed similar symptoms. Alfred had been playing with these children during his illness.

The mother gave the following description of Alfred's illness: He began to complain of chills followed by slight fever and night sweats; this was associated with paroxysmal cough, discharge from the nose, watering of the eyes, slight soreness in the throat, slight pain in the chest and abdomen, and absolute loss of appetite. There was marked constipation. Vomiting frequently occurred after paroxysms of coughing. The cough was of a severe croupy character, and, at first, lasted half an hour. These attacks occurred more frequently during the night. There were four or more severe attacks at night and two or three lighter ones during the day. Occasionally during the night, these paroxysms terminated in a distinct whoop. When the child was first seen, the symptoms had subsided, except the cough and the discharge from the nose, which was at this time mucopurulent. He had a slight bronchitis and vesicles of chickenpox.

Urban, who was similarly affected, was also taken with chills and fever, which were followed by sweats. He had a peculiar dry paroxysmal cough, having three or four severe attacks at night, which lasted until he vomited. He had marked lachrymation without congestion, nasal discharge, sore throat, thoracic and abdominal pains, but no rash. The fever lasted about one week, during which he had several night sweats; anorexia was marked and he was very constipated.

Pearl's case corresponded closely to Alfred's and Urban's, except in the following particulars: Her eyes, at first watery, became mucopurulent and the lids were pasted together in the morning. In addition to the discharge from the nose, there was much sneezing. The cough, which was spasmodic

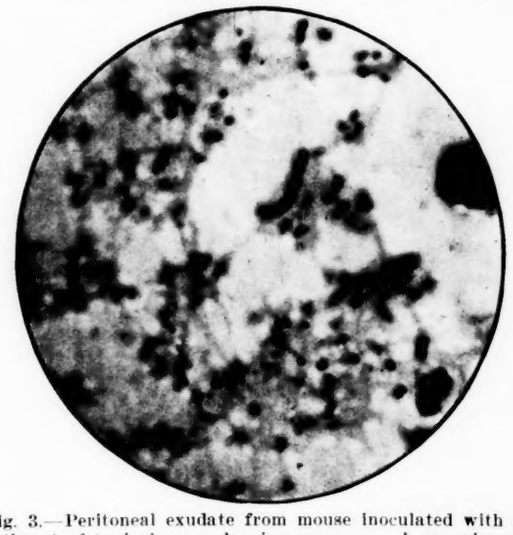

Fig. 3.—Peritoneal exudate from mouse inoculated with culture from throat of typical case, showing pneumococci, capsules and one short chain.

in character, produced gagging after each paroxysm. Her appetite was not impaired.

The mother had the same train of symptoms; namely, fever, sweat, cough, sneezing, rhinitis, mild conjunctivitis, pain in chest, slight abdominal cramps, anorexia and vomiting after paroxysms of coughing. Her symptoms lasted three weeks.

The father had the same symptoms, but a more intense conjunctivitis. His eyes were painful, watery and itching at the beginning; the conjunctivæ soon became injected and the eyes felt dull and heavy; photophobia was quite marked. There was slight frontal headache. The discharge from the eyes, at first serous, became mucopurulent. The eye symptoms subsided in four or five days. The respiratory and gastrointestinal symptoms were less pronounced than in other members of the family. He had a sore throat, a moderately dry cough, not paroxysmal in character, no nausea, vomiting or anorexia, and no thoracic or abdonimal pains.

The baby began with intestinal symptoms: viz., nausea, vomiting and diarrhea. The cough appeared two days later, accompanied by fever, sweats, conjunctivitis, rhinitis, pharyngitis and bronchitis. The cough, which was severe, appeared in paroxysms, simulating fully developed whooping-cough from the beginning. She had a mucopurulent conjunctivitis in both eyes, slight swelling of the eyelids and intense photo-

phobia, the child burying her face in her mother's lap to shut out the light. A rhinitis, which began with sneezing, followed by serous discharge, became mucopurulent in character. The throat was uniformly red; the tonsils were not enlarged. The mother felt alarmed because the child refused all nourishment for several days. It vomited considerable mucus and had diarrhea, passing, in twenty-four hours four to seven stools which contained much mucus and were highly offensive. The temperature was 102 F.; the pulse was rapid. Coarse bronchial râles were heard all over the chest. The liver and spleen were not enlarged. A slight heat rash was observed. Cover-slip preparations and cultures from the nose and the throat of the mother and the baby showed pneumococci.

GROUP 2.—May 10.—S. family. Four members were affected: Aunt K., aged 35, mother aged 40, and two children, Celeste aged 5 and Janette aged 7, both of whom had had measles and chickenpox. Mrs. M. and sister, living in a flat on the second floor of the same dwelling, were also affected. The first one affected was Mrs. M., who became ill about April 20. A week later aunt K. was affected; Janette three days later; Celeste three days after Janette, and the mother a few days later than Celeste.

Aunt K.'s illness began with chilliness and fever followed by sweats, associated with cough, sneezing, discharge from nose and lachrymation. Later, the nasal discharge became mucopurulent, but that from the eyes remained watery. The

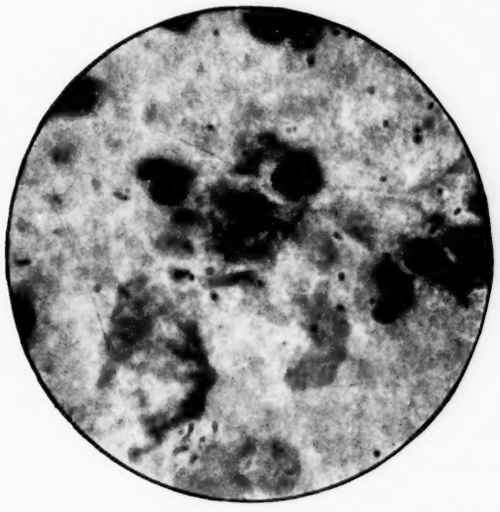

Fig. 4.—Many pneumococci in typical exudate from throat.

eyes became painful. She suffered with burning and itching and was not able to read without considerable difficulty. Epistaxis occurred three times during the attack. Her throat was sore and she complained of dryness and hoarseness. There was substernal pain. The cough, which was dry, occurred in paroxysms, and occasionally there were associated sensations of choking, as if a foreign particle were lodged in her trachea. This was sometimes accompanied by vomiting of intensely tenacious mucus. There was also loss of appetite, which lasted two days.

Janette was taken sick three days after aunt K. Her illness began with a distinct chill, which was followed by considerable fever and sweats, and by sneezing, nasal discharge, cough and mucopurulent conjunctivitis. The right eye was first affected; the left shortly after. The discharge from the nose, which was watery at first, became so thick and tenacious that it clogged the nostrils and the child was unable to breathe through her nose, especially in the morning. In order to relieve this obstruction, the mother resorted to the use of cold cream inserted into the nostrils, after which she was able to remove plugs of inspissated secretions by means of a hairpin. This procedure was carried out for five successive mornings. The cough, croupy in character, was worse at night than during the day and occurred in paroxysms. The tenacious secretions caused a choking sensation and vomiting, when an effort on the part of the child was made to remove them. There was complete anorexia. The bowels were constipated. The child suffered from headache, earache and abdominal pains and also had considerable mediastinal pain. She complained of dryness of the mouth, great thirst and hoarseness.

Physical examination of Janette.—The patient was up and about, but appeared somewhat nervous. Her eyelids were swollen, the upper more than the lower, and were of the peculiar rose color described by Axenfeld. There was a mild blepharitis and the eyelids were matted with dry, yellow masses of pus. The child presented a picture of adenoid facies and was breathing through her mouth. A profuse herpetic eruption was observed on the lips. There was a slight excoriation about the nares. The tongue was dry and slightly coated and showed several patches of aphthous stomatitis,

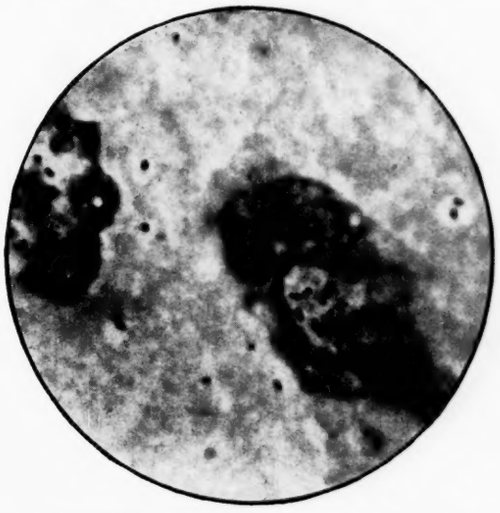

Fig. 5.—Pneumococci in a pus cell and in the nucleus of an epithelial cell from a case with a fibrinous membrane.

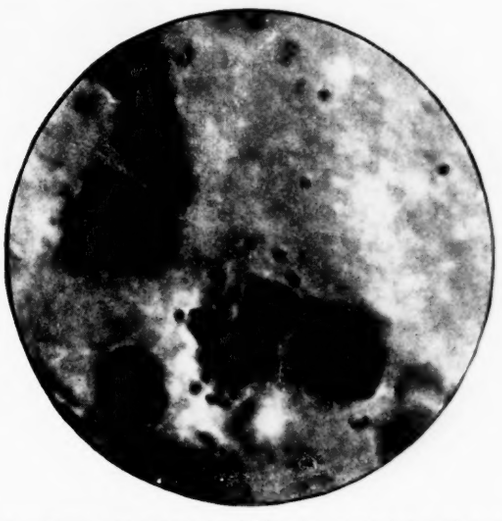

Fig. 6.—Many pneumococci within the protoplasm of a pus cell showing active phagocytosis.

which also appeared on the buccal mucous membrane. The mucous membrane of the mouth and pharynx were uniformly red. The tonsils were slightly enlarged; the uvula was swollen and edematous. The cervical glands were prominent. Coarse, dry râles were heard over the chest. Pulse and temperature were normal.

Celeste began to complain three days after Janette. She had played with Janette and had spent much time with the family, similarly affected, living in the upper flat. The subjective symptoms corresponded throughout with Janette's.

Physical examination of Celeste.—The child was sitting up, but not disposed to play. Pulse, accelerated; evening temperature, 101.5 F.; skin, dry. The child breathed through her

mouth. The eye symptoms were not as marked as Janette's, but were worse a few days before. She also had herpes and her tonsils were considerably enlarged. The mucous membrane was of a deep red color. While her throat was being examined, she was seized with a paroxysm of coughing, during which she gagged and expectorated a large amount of thick, tenacious, fibrinopurulent matter, portions of which were rusty in character, not unlike the sputum of pneumonia. This expectoration adhered to the bottom of the vessel containing it when inverted. Microscopic examination showed numerous pneumococci. The cervical glands were enlarged and painful. Coarse bronchial râles were heard all over the chest, otherwise the chest was negative. A blood examination showed a leucocytosis of 15,200, and the following differential count: Small mononuclear cells 20, large mononuclear 10.5, polymorphonuclear 69.5. Cultures and cover-slip preparations from the mucopurulent expectoration after vomiting, showed pure pneumococci.

The mother had a very mild attack; the most distressing symptom was the cough.

The disease ran a course of about two weeks in the case of the aunt and the two children. In the case of the mother it lasted only a few days.

One of the most interesting cases of this collection was treated in the Baltimore Eye, Ear and Throat Char-

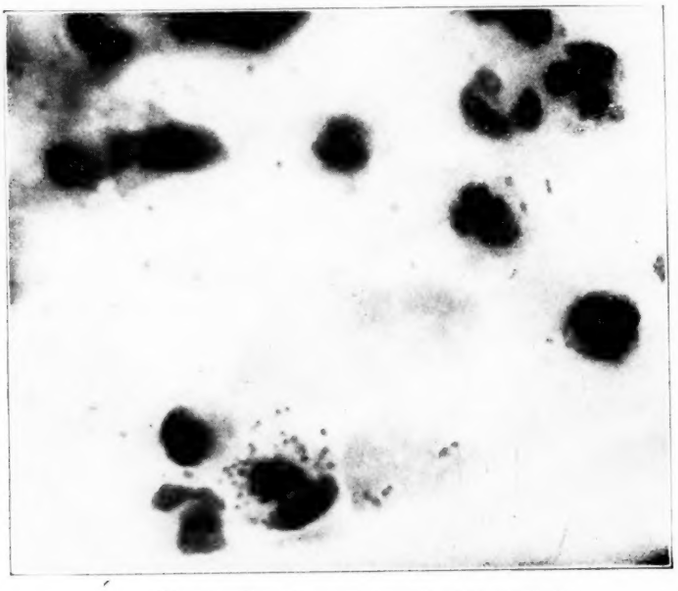

Fig. 7.—Pus from eye showing phagocytosis.

ity Hospital. It was through the courtesy of Dr. Harry Friedenwald that I was invited to examine the patient and permitted to embody the history in my report. I am indebted to Dr. J. W. Downey, resident physician, for the history of the case, from which I have made the following abstract:

CASE 1.—The patient, a boy, aged 18 months, was admitted to the hospital April 25. The mother thought the child had measles a month previously, although she says the measles never "came out." The early symptoms of the illness were hoarseness, cough, fever and lassitude. Several brothers and sisters were affected in the same way; none of them had a rash. The eye condition had existed one week previous to the admission to the hospital, and the eyes had been slightly affected during the whole course of the so-called "measles."

Examination.—This showed a fairly well developed child, although rather poorly nourished. The lids of both eyes were swollen, so that the eyes were closed (Fig. 1). The lids were soft to the touch. There was a slight mucopurulent discharge from both eyes and a slight eczematous eruption around the eyelids. The palpebral conjunctivæ of both eyes were much swollen, and covered with a slight, loosely adherent membrane. The ocular conjunctivæ were not covered with a membrane and were not edematous, but were very much congested. Examination of conjunctivæ caused bleeding. There was a cloudiness of the cornea of the right eye and a hazy appearance of the cornea of the left eye, but there were no ulcers. Impetigo pustules were observed on the face and body. There was a pale, stringy, nasal secretion. The voice was weak and hoarse, and his cries were crowing in character. The mucous membrane of the mouth and throat was slightly reddened, and there was a slight, dirty looking membrane, which appeared in patches, in the pharynx. The larynx also showed a few shreds of membrane. Cough was a distressing symptom. Moist bronchial râles were heard. The chest was normally developed and the heart was normal. Appetite was poor. The child passed from four to five diarrheic stools daily; these were at times tinged with blood. The spleen was distinctly enlarged.

One thousand units of diphtheria antitoxin were at once administered, although cover smears and cultures on blood serum and agar later proved negative for diphtheria. The bacteriologic examination of the eyes showed almost pure pneumococci. A few staphylococci were also found, and staphylococci were obtained in cultures from pustules from the face and leg.

May 2, an ulcer developed on the right cornea. The left cornea was still cloudy, but no ulceration appeared. No improvement in general condition.

May 7, ulcer appeared on the left cornea.

May 17, the report showed that the child had had an almost continuous fever for three weeks previous, ranging from 99 to 100.3. The eyelids were still swollen and the child was unable to open them. The intestinal symptoms had improved and the membrane from the eyes and throat had disappeared.

May 25, Dr. Friedenwald reported the recovery of this patient with maculæ of both corneæ.

CASE 2.—A parallel case is that of Mr. S., aged 23, who had a severe purulent conjunctivitis with small ulcerations on each cornea and a yellow, loosely attached membrane on the left inferior turbinate and on the left side of the nasopharynx. The general appearance of the membrane was very suggestive of diphtheria and 3,000 units of antitoxin were at once administered. Cultural and inoculation methods of examination, however, demonstrated a pure pneumococcic membrane.

I shall not give a detailed statement of other cases which resemble greatly those above reported. In the following I shall give a brief summary, based on the observations made on my own cases and those of several colleagues.

ETIOLOGY.

That this disease is of an infectious nature is evident from the report of the two family groups in this paper. In all except ten cases there was a history of house infection. Forty-six cases occurred in thirteen families. In a family consisting of eight members, only two girls were affected. They slept in the same bed. Another family, in which six were affected, the disease was distinctly traced to a servant who had the symptoms for three days before the general outbreak. An interesting example of the epidemic character is an outbreak on board a bay steamer, in which 20 per cent. of the crew suffered the same symptoms, including the captain, chief engineer, second mate and watchman. A smear from the engineer's throat showed epithelial cells containing as many as sixty pairs of encapsulated diplococci. The epidemic character of pneumococcus conjunctivitis has been pointed out by Hauenschild[5] and its invasion of families by Bänzinger and Silberschmidt and by Veasey.[6] Most of the cases of pneumococcus conjunctivitis which have been reported have not occurred in epidemics.

5. Ztschr. f. Augenheilk., III, p. 200.
6. Arch. of Ophth., XXVIII, 1899, p. 30.

From a single observation, it appears that animals are not immune. In a family in which three members were affected, one of the patients was fondling a pet cat. Three days later the animal began to sneeze, which was followed shortly by a severe cough and a purulent conjunctivitis. Unfortunately, the cultures taken from the eye were lost and no bacteriologic examination was made. Collica[7] was able to produce pneumococcus conjunctivitis experimentally in young dogs, but not in rabbits.

AGE.

The disease is met with more frequently in children.[8] In twenty-nine of the fifty-six cases, it occurred under 7 years of age, ten of these were under 1 year, the youngest patients were twins, 8 weeks old. It occurred four times in the second decade, eight in the third, nine in the fourth, and five in the fifth; the oldest patient was the engineer above referred to, 56 years of age.

PREVALENCE.

All of my cases occurred in the spring. Epidemics of pneumococcus conjunctivitis have likewise been observed in the spring or in the fall.[9] Many new cases have been brought to my notice since I concluded the study of this series. A number of physicians have informed me of meeting similar cases in their practice in Baltimore. Physicians in other cities have also seen numerous cases which correspond to this disease. No reference has been made in any of the medical journals, although the lay press recently reported epidemics of "colds" in London, Philadelphia and Baltimore. These epidemics may possibly be of the same nature.

SYMPTOMATOLOGY.

The period of incubation ranges from two to seven days.[10] The invasion is usually marked by chilliness, slight febrile disturbance, and occasionally night sweats. There is rarely a distinct chill. The temperature, usually from 99.5 F. to 102 F., continues from three or four days to one week. The highest temperature recorded is 103.5 F.; the pulse is not much accelerated. Sneezing, lachrymation and a mucous discharge from the nose are early symptoms. These are followed by a burning sensation in the nose, itching of the eyelids and slight soreness in the throat.

A spasmodic cough, croupy in character, usually worse at night than during the day and often associated with nausea, and even vomiting, is a fairly constant phenomenon. Occasionally the paroxysm terminates in a distinct whoop. In some instances the cough is less spasmodic and more hacking, like that of early tuberculosis. It is nearly always a dry cough, and, if expectoration is present, it occurs as an extremely tenacious, yellow mucopurulent excretion, which adheres to the bottom of a vessel when inverted, and rarely is it blood streaked. There is frequently an associated bronchitis, but the symptoms manifest a more profound inflammation of the upper air passages as indicated by a uniform redness of the mucous membrane of the nose, nasopharynx, soft palate, larynx and vocal cords and by hoarseness and a laryngeal or tracheal cough.[11]

The eyes are also frequently affected; the usual symptoms are lachrymation and photophobia; the conjunctivæ often become injected, and in twenty-one of my cases (37.5 per cent.) a purulent conjunctivitis developed. Two of these cases were complicated with corneal ulcers.

Profuse herpetic eruptions frequently occur. The tongue is generally dry and somewhat coated; loss of appetite and often complete anorexia are distressing symptoms, especially in nursing children; nausea and vomiting of stringy, tenacious mucus, after paroxysms of coughing, is a quite constant feature. Constipation is the rule, although diarrhea may ensue, with blood and mucus in the stools. Intense thirst has been noted in many of the afebrile cases, as well as in those accompanied with slight fever. Polyuria was frequently present. Vesical irritability was observed in three of the cases. In one the irritation was doubtless due to hyperacidity of the urine (70 c.c. of deci-normal solution of sodium hydroxid were required to neutralize 100 c.c. of urine in the presence of an excess of potassium oxalate). The urine is generally pale, highly acid, low in specific gravity and free from sugar, albumin and casts.

A striking feature in the study of these cases is the absence of any marked nervous or mental symptoms. There is little or no mental or physical depression. Few of the patients were found in bed on my first visit, and practically all the children affected with the disease emphatically refused to stay in bed, even with a moderate fever of 101 F. or 102 F. Most of them did not feel ill or distressed except when seized with a paroxysm of coughing, during which they suffered from a severe choking sensation. In three instances I was hastily summoned, as the parents thought the children were dying from strangulation. During these attacks, which lasted only a few minutes, the patients became cyanosed and exhausted. Immediately after the attack they felt as well as usual. One patient, a girl of 20, had five such attacks in twenty-four hours. After a thorough cleansing of the larynx by means of an alkaline spray they promptly ceased.

Mild frontal headaches, substernal and epigastric pains are frequently complained of. Dr. H. C. Knapp furnished me with notes on an interesting case of pneumococcic bronchitis in which there was a pseudomembrane in the throat, and severe joint pains especially in both knees and ankles. With the exception of chickenpox vesicles in one case, sudamina vesicles in another and impetigo in a third, no eruption was observed. Many cases developed a mild adenitis, especially of the postcervical glands. The spleen was only enlarged in those cases associated with severe intestinal symptoms. A decided leucocytosis was observed in all cases in which the blood was examined, ranging from 12,500 to 21,000.

SPECIAL SYMPTOMS AND COMPLICATIONS.

A significant feature of this disease is the formation of a pseudomembrane. This occurred in 12.5 per cent. of all the cases. The membrane is of a light yellow color, usually situated in the nose, pharynx or nasopharynx and occasionally the conjunctiva. It is easily removed, but usually leaves a bleeding surface of the mucous membrane. Cover-slip preparations show an enormous amount of encapsulated pneumococci, and di-

7. Accordino, Supplemento al Policlinico, 1899.

8. The predisposition of children to pneumococcus conjunctivitis has been shown by Axenfeld in Kölle and Wassermann's Handbuch.

9. Nicholas, C.: Etude sur la conjunctivites à pneumonocoques, Thèses, Paris, 1901.

10. Halle (Annals d'Oculist, cxxiii, p. 200) found the period of incubation of pneumococcus conjunctivitis very variable. An accidental infection in one case resulted in the development of an acute conjunctivitis on the third day; in another case on the seventh day.

11. Denig (Ztschr. f. Augenheilk, iv, p. 213), has called attention to the association of pneumococcus conjunctivitis and pneumococcus angina.

rect inoculation into animals produces pneumococcic septicemia. Severe bronchitis was present in ten of the cases. Some of them which have been carefully studied by Dr. Stokes prove almost beyond a doubt to be due to a pneumococcus infection. Vomiting of clear or bile-stained mucus after coughing occurred in 37.5 per cent. of the cases. This appeared to affect small children more constantly than adults. Vomiting was often accompanied with intense retching. Diarrhea complicated four of the cases in this series, all of which occurred in children under 4 years of age. They averaged from three to seven movements daily. The stools were thin, highly offensive, and contained a large amount of mucus which was occasionally streaked with blood. Fibrinous pleurisy complicated two cases and frontal sinusitis and purulent otitis media each complicated a single case.

It is strange to say that pneumonia did not develop in any of these cases, although Dr. C. F. Blake informs me that he has recently seen two cases follow an acute catarrhal condition, which answered the description of this disease.[12]

COURSE AND RELAPSE.

The average duration of the acute stage is from one week to ten days. The cough frequently persists much longer, and in some instances it continued for five or six weeks. Six of the patients had definite relapses; five occurred in young children and one in an adult. The interval between the subsidence of the primary attack and the onset of the relapse ranged from one to two weeks.

DIFFERENTIAL DIAGNOSIS.

If this is an independent affection, then it is necessary to differentiate it from: 1, measles; 2, whooping-cough; 3, influenza; 4, an epidemic catarrh due to the micrococcus catarrhalis, and, 5, epidemic conjunctivitis.

Measles.—The mere fact that there is a uniform absence of Koplik spots and rash should suffice. If, however, in addition, we consider the fact that having had measles does not lessen the susceptibility of the individual to an attack of this disease, we can safely exclude the possibility of measles.

Whooping-cough.—While it is true that in a small percentage of cases there is a distinct whoop, yet this appears as early as the second day of the illness and usually disappears within a period of one week. Moreover, the most typical cases that I saw, developed in children who have had whooping-cough.

Influenza.—With the exception of the absence of a mental and physical depression and severe nerve pains, the condition presents a close resemblance to influenza. Other differentiating features to be considered in the present epidemic are the tendency to the development of pseudomembrane and conjunctivitis; the peculiarly characteristic cough; the more or less persistent hoarseness, and, above all, the absence of the Pfeiffer bacillus.

Epidemic Catarrh.—This is generally a mild catarrhal affection and is not characterized by any gastro-intestinal symptoms. The characteristic organism, *Micrococcus catarrhalis,* was not found in any of the patients examined.

Epidemic Conjunctivitis.—As far as the eye symptoms are concerned, there are no distinguishing features to separate it from the epidemic pneumococcic conjunctivitis which was prevalent in a number of large communities in continental Europe in 1896, as described in the report of Kölle and Wasssermann. These authors, unfortunately, merely called attention to the fact that there is associated an acute catarrhal condition, and look on the eye symptoms as the essential lesion. In this epidemic, the eye symptoms are subsidiary, the primary seat being almost invariably in the upper air passages, and, as already stated, only 37.5 per cent. developed pneumococcic conjunctivitis.

TREATMENT.

The cough is very intractable and little influenced by ordinary cough mixtures. Antipyrin and the bromids diminish the intensity and frequency of the paroxysms. Much relief is obtained by a thorough cleansing of the mucous membrane of the nose and throat by the use of an alkaline spray. The mild forms of conjunctivitis yield readily to the local application of boracic acid solution. The severe mucopurulent and membranous forms were successfully treated with 10 per cent. argyrol solution. Quinin administered in large doses (twenty-five to thirty-five grains daily) has proved an efficient remedy. It has the effect of promptly reducing the temperature and lessening the cough and coryza.

From the clinical and bacteriologic study of these cases, we believe that this affection is an acute pneumococcic disease of a decidedly epidemic character.

BACTERIOLOGIC STUDY.

Before describing the findings in the bacteriologic study of this acute, inflammatory, communicable infection of the conjunctiva and upper air passages, it is proper to mention the various bacteria which are found in diseased conditions of these mucous membranes.

The conjunctival epidemic inflammations are usually produced either by the Koch-Weeks bacillus or the Morax-Axenfeld organism. The former bacillus is very small, decolorizes by Gram's method, is found in and outside of the pus cells, and will only grow on blood agar or other similar media. The latter organism is a much larger, thicker bacillus which often occurs in pairs and also decolorizes by Gram's stain. It may be cultivated on blood serum. Among the other bacteria may be mentioned *B. diphtheriæ, Micrococcus gonorrhœa, Staphylococcus aureus, Streptococcus pyogenes, Meningococcus intracellularis, Bacillus coli, Bacillus pyocyaneus* and *Diplococcus pneumoniæ.* Any of these organisms also may produce inflammation of the mucous membranes of the throat and nose.

In most of the cases which we examined bacteriologically we found the *Diplococcus pneumoniæ* at times in combination with the pyogenic micrococci, and the pneumococcus has previously been reported by several investigators as the cause of epidemic conjunctivitis. These outbreaks are described in Kölle and Wassermann's Bacteriology, 1903.

The first cases of pneumococcic conjunctivtis were reported by Parinaud[13] and Morax[14] in 1894 as occurring in newborn infants and young children, and these cases were accompanied by lachrymation, coryza and purulent and fibrinous inflammation of the conjunctival mucous membranes.

Gasparrini[15] and Axenfeld[16] in 1896 reported many cases of pneumococcic conjunctivitis in children and

12. The association of pneumococcus conjunctivitis and of pneumonia was pointed out by Pymowicz in 1902 (*Postep. Okul,* No. 11, Polish).

13. Ann. d'ocul., 1894.

14. Recherches bacter. sur l'etiol. des conjunctivites algues. Thèse de Paris, 1894.

15. Annali d'ottalm., 1893, xxii, 6, and 1896, xxv.

16. Verhanglungen der ophth. Gesellsch. Heidelburg, 1896; Deutsche med. Wochschr., 1898, No. 1.

adults, and they considered the infection communicable.

The geographic distribution of this disease is widespread, and epidemics have been described as occurring in several cities in Germany, Austria, Italy, Denmark, Switzerland, Russia, Egypt and the United States. In these cases the inflammation was limited to the conjunctiva, and we have been able to find only one case reported by Denig[17] in which this condition was accompanied by an angina, or fibrinous inflammation of the throat.

It is difficult to produce an inflammation of the conjunctiva in rabbits and other animals by means of the pneumococcus, although this has been accomplished after scarifying the conjunctiva. The history of the outbreaks among human beings, however, makes it highly probably that the condition is communicable, and this was proven by Gifford[18] and von Pichler[19], who produced the disease in healthy persons by inoculating their eyes with pure cultures of the pneumococcus obtained from cases of epidemic conjunctivitis. Hauenschild[20] produced the disease by inoculating the pus from the eye into healthy eyes, and proved an incubation period of about two days.

From what has been said it can be seen that the clinical picture of this condition has almost entirely related to the conjunctiva. Dr. Beck, however, has demonstrated that the mucous membranes of the throat and nose are also frequently affected both by purulent and fibrinous inflammations, and in our bacteriologic studies we have made routine cultures from the nose, throat and eye of all the cases examined. In addition, in most of the cases, we have examined cover slips from the eye, nose and throat, and the cultures have frequently been inoculated into white mice or rabbits to prove the virulence of the pneumococcus.

So far we have studied 33 cases, and by microscopic examination have found pus cells and pneumococci in 7 specimens from the nose, 9 from the throat and 10 from the eye. Capsules were stained by Welch's method in 1 preparation from the nose, 3 from the throat and 2 from the eye. We failed to find pus cells and pneumococci in 2 specimens from the nose, 1 from the throat and 3 from the eye. No microscopic examinations were made of the other cases.

The pneumococcus was found in cultures in 8 cases from the nose, in 2 of which fibrinous membranes were present, and in 23 cases from the throat, in 4 of which membranes were present. In 7 out of 17 cases the cultures from the eye contained pneumococci, and in the rest of the 33 cases the eyes were not examined. The original cultures from most of our cases were inoculated into white mice, and the pneumococci often proved virulent, killing the animals with general septicemia in from 1 to 11 days. The cultures from the eye produced pneumococcic septicemia 3 times and those from the throat and nose each 5 times.

In the second series of 16 cases we inoculated 8 rabbits intravenously with pure cultures from the throats of the patients, and 5 died of general pneumococcic septicemia. In 29 out of 33 cases the pneumococcus was obtained either from the nose, throat or eye by coverslips, cultures or animal experiments.

In order to exclude the Koch-Weeks and influenza bacilli, cultures were made from the throat and eye in 5 cases on blood agar with negative results. We also failed to find any of those very fine, Gram-decolorizing bacilli in the microscopic examinations of cultures from the eyes, nose and throat, and think that this organism may be excluded as a causative agent. In many of the cases we obtained the pneumococcus in pure cultures, but some of the throat and nose cultures contained the *Staphylococcus aureus* and *albus* and the xerosis bacillus. Several cultures from the eye showed the presence of these pyogenic micrococci. We think that these organisms are secondary invaders and that the inflammatory condition can be produced by the pneumococcus alone.

In several of the cultures from the pus from the eyes and membranes in the nose and throat and in coverslips from these materials only pneumococci were found. Frequently the pneumococci were within the pus cells showing phagocytosis. We consider this, therefore, the primary infectious agent.

These cultures gave the usual cultural and staining characteristics of the *Diplococcus pneumoniæ*, although we made no attempt to distinguish between the two forms of the organism, in respect to its effect on culture materials containing inulin. The diagnosis was based on the presence of capsules, the coagulation and acidulation of milk, the clouding of bouillon, and its failure to grow well in gelatin.

In ascribing to the pneumococcus the causative rôle in this disease, we have not disregarded its presence in the normal mouth and throat. The "Report of the Medical Commission for the Investigation of Acute Respiratory Diseases of the Health Department of the City of New York" contains several investigations which show that the pneumococcus is an almost constant inhabitant of the throat and mouth. Park and Williams found either typical or atypical pneumococci in 51 out of 80 normal mouth secretions examined, and Longcope and Fox found typical pneumococci in 19 out of 40 normal throats which they examined. Duval and Lewis isolated this organism in all of 24 healthy persons examined, and Berger found it in 110 out of 283 normal throats examined. The pneumococcus, therefore, can be considered an almost constant inhabitant of the mouth and throat.

But when this organism is discovered in diseased conditions of the mucous membranes, usually in pure culture, frequently virulent, and so distributed in purulent and fibrinous inflammations as to explain these conditions, we have no hesitancy in considering it as the cause of the condition. The photomicrographs from typical cases also show the organism in large numbers, often within the pus cells, showing active phagocytosis, and this is a further point in favor of its being the cause of the disease.

CONCLUSIONS.

This disease exists as a distinct entity, characterized by purulent or fibrinous inflammation of the mucous membranes of the eye, nose and throat.

The infection can be communicated from diseased to healthy persons.

The infection is caused by the pneumococcus, resembling in its cultural and pathogenic properties the cause of lobar pneumonia.

17 Ztschr. f. Augenheilk., 1900, 213.
18. Arch. of ophthal., 1896, xxv, 314.
19. Beitr. z. Augenheilk., 1896, xxiv, 19.
20. Ztschr. f. Augenheilk., 1900, iii, 1.

Physical Morality.—Perhaps nothing will so much hasten the time when body and mind will both adequately be cared for, as a diffusion of the belief that the preservation of health is a duty. Few seem conscious that there is such a thing as physical morality.—Herbert Spencer.

THE RATE OF ELIMINATION OF URIC ACID IN MAN.*

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Recent years have yielded substantial contributions to our knowledge of purin metabolism and the genesis and elimination of uric acid in the animal organism.[1] The studies of Sivén and of Burian and Schur taught the distinction between endogenous and exogenous components in connection with uric acid excretion, and they have emphasized the probability that under ordinary conditions the endogenous purin output is fairly constant for the same individual. Quite lately evidence has accumulated to show that under exceptional circumstances, such as starvation or a low nitrogenous diet, the absolute quantity of endogenous uric acid eliminated may be diminished.[2] The widely accepted law of constant uric acid excretion on a diet free from purin derivatives has thus again been called into question, and further investigation will be necessary to explain the discrepancies noted under different dietary conditions. A further distinct advance in current conceptions regarding purin metabolism is indicated in the better appreciation that the uric acid eliminated from day to day ordinarily represents a balance between the quantity formed and that destroyed within the organism. In man the destruction of purins (or uric acid precursors) is not complete; indeed, it is far less so than in certain of the laboratory animals, such as the dog, cat and rabbit.

It is obvious that perversions of purin metabolism may take place in several directions. The progressive hydrolysis and oxidation of ingested or intermediary purins may be retarded or accelerated through involvement of some of the organs effectively concerned with these reactions. Uric acid may accordingly be either formed or destroyed more or less readily than usual. Or, again, the elimination of normally formed uric acid may be subjected to some peculiar alteration. Investigators have for the most part been concerned with final or absolute results—with the total quantitative changes involved under different circumstances. The accumulated data on the quantity of uric acid excreted under an almost endless variety of conditions have furnished volumes of scientific memoirs. Yet the study of the rate at which these metabolic and excretory functions proceed has, on the other hand, scarcely received consideration. It is to this aspect that we wish to direct attention.

With respect to the rate of formation and destruction of uric acid in man, indirect evidence only can be adduced at the present time. The study of the composition of the urine elucidates the rate of elimination of the undestroyed residues. Data obtained at longer intervals, such as daily periods, may fail to indicate features of importance which a study of shorter intervals would reveal. Thus, irregularities in production and elimination might easily be compensated during longer periods and thus completely overlooked, whereas they would become conspicuous when the results are examined from hour to hour.

Marés[3] and Hopkins and Hope[4] furnished the earliest data of importance regarding the rate of uric acid elimination. They observed that the figures for the hourly excretion after a meal containing uric acid precursors

EXPLANATORY NOTE.—In all the charts each vertical line (ordinate units) represents one milligram of uric acid; each horizontal line(abscissa units) marks off successive hourly periods; the vertical arrow indicates when the meal was ingested; the heavy horizontal line beneath each record shows, comparatively, the total increment of uric acid output above the abstinence output.

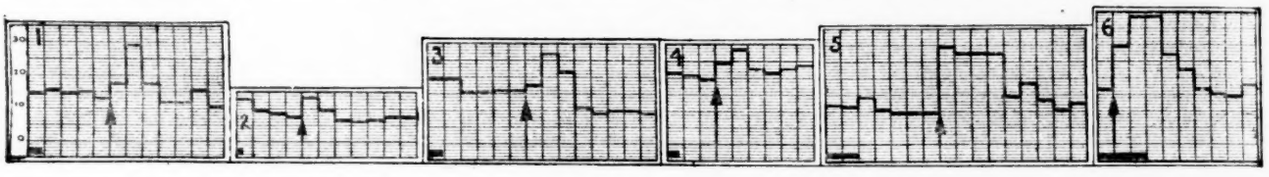

Fig. 1.—(Table A.) Test meal of 300 gm. crackers with butter.
Fig. 2.—(Table A.) Test meal of 30 gm. sago, with sugar and few crackers.
Fig. 3.—(Table A.) Test meal of 50 gm. casein in 450 c.c. milk.
Fig. 4.—(Table A.) Test meal of 50 gm. crackers, with 950 c.c. milk.
Fig. 5.—(Table A.) Test meal of 6 eggs, fried.
Fig. 6.—(Table A.) Test meal of 8 eggs, fried.

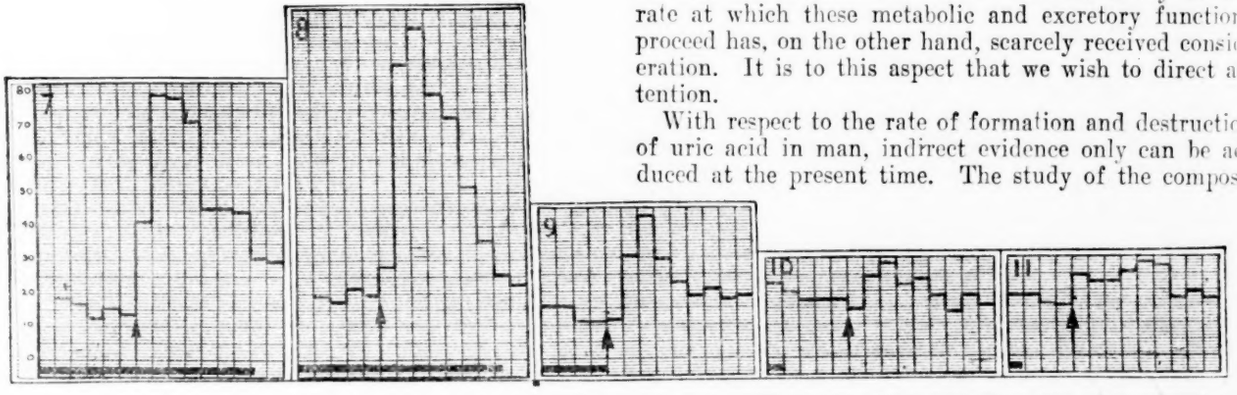

Fig. 7.—(Table B.) Test meal of 500 gm. beefsteak (chopped).
Fig. 8.—(Table B.) Test meal of 600 gm. beefsteak (chopped).
Fig. 9.—(Table B.) Test meal of water extract of 500 gm. beefsteak.
Fig. 10.—(Table B.) Test meal of residue after extraction of 500 gm. beefsteak.
Fig. 11.—(Table B.) Test meal of coagulable proteins extracted from 500 gm. beefsteak.

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

* From the Sheffield Laboratory of Physiologic Chemistry, Yale University.

1. The literature on the formation of uric acid has lately been reviewed by Mendel: The Harvey Lectures, 1905; THE JOURNAL A. M. A., March 24 and 31, 1906. Cf. also Bloch; Biochem. Centrbl., 1906, v. 521, et seq.

2. Cf. Folin: Am. Jour. of Physiol., 1905, xiii, 66; Jackson and Blackfan: Studies from the Bender Hygienic Laboratory, 1906, iii, 24; Shaffer: Am. Jour. of Physiol., 1906, xvii, 370; Leathes: Am. Jour. of Physiol., 1906, xxxv, 129.

3. Jahresb. f. Thierchemie, 1888, xviii, 112.

4. Jour. of Physiol., 1898-99, xxiii, 271.

furnished a curve in which the maximum was reached in about five hours. The curves for different individuals were quite comparable in this respect. In our laboratory Beebe[5] obtained similar results. Statistics compiled in this way involve the assumption that the hourly elimination of uric acid in the absence of food is practically constant. With certain wide limitations this tends to hold at definite periods of the day. Pfeil[6] has studied the rate of elimination of uric acid at three-hour intervals and noted a ready response in increased uric acid elimination after meals containing purins (meat). The form of the "curve of elimination" was characteristic and alike in different healthy individuals. In pathologic conditions, on the other hand, Soetbeer[7] found that the hourly output of uric acid may deviate from the normal findings with the same diets. His experience was obtained on gouty patients, in both chronic and acute cases. The curves here show an extreme irregularity of form, indicative of profound alteration of the rate of elimination as well as quantitative differences in the total output of uric acid associated with a fixed diet. The more extensive examination of the curves of excretion under known dietary conditions in pathologic cases may throw new light on the nature of some of these disorders.

Obviously the preliminary requisite for any adequate investigation of the rate of purin elimination is an understanding of the metabolism of known ingesta. Several years ago one of us (Brown) undertook an extensive series of experiments on the hourly elimination of uric acid. The method of procedure was similar to that introduced by Hopkins and Hope.[8] Although the research was intended to elucidate other problems, we have thought that some of the data might prove of value in any future consideration of the "elimination curves" characteristic for different dietaries and thus contribute to establish the "standards," so to speak, of normal rate of purin excretion.

TABLE A.—EXPERIMENTS WITH PURIN-FREE MEALS.

Protocol No.	1		2		3		4		5		6	
Meal.	300 gm. crackers with butter.		30 gm. sago with sugar and few crackers.		50 gm. casein in 450 c.c. milk		50 gm. crackers with 950 c.c. milk.		6 eggs fried.		8 eggs fried.	
Urine.	Volume. c.c.	Uric acid. mg.	Volume. c.c.	Uric acid. mg.	Volume. c.c.	Uric acid. mg.	Volume. c.c.	Uric acid. mg.	Volume. c.c.	Uric acid. mg.	Volume. c.c.	Uric acid. mg.
Hour.												
7- 8	..	....	..	....	27	19.4	..	....	26	12.0	26	16.2
8- 9	37	14.6	..	....	26	19.5	..	....	34	11.6	42	29.9*
9-10	30	15.6	26	13.0	26	15.3	42	21.5	36	14.2	44	38.9
10-11	32	14.6	29	9.5	27	15.3	32	21.0	35	10.2	52	38.5
11-12	30	14.9	28	9.0	30	16.0	36	19.8	37	9.8	46	27.0
12- 1	30	12.7	28	7.5	27	15.9	45	21.8*	38	9.7	48	22.3
1- 2	32	17.1*	144	13.3*	32	17.8*	90	28.7	42	9.8	50	16.9
2- 3	20	28.8	38	9.3	58	27.0	42	22.9	42	25.9	42	15.1
3- 4	28	17.1	28	6.4	50	21.5	42	21.7	36	22.2	38	14.4
4- 5	22	11.6	30	6.1	40	10.9	37	22.7	34	22.9	52	18.0
5- 6	27	12.0	23	6.4	45	9.1	22	23.8	33	22.1	..	....
6- 7	40	15.6	30	7.3	46	10.9	..	....	40	14.9	..	....
7- 8	32	10.7	22	7.4	31	9.9	..	....	36	18.6	..	....
8- 9	33	....	..	....	32	10.2	..	....	38	13.1	..	....
9-10	28	....	..	....	30	9.3	..	....	34	10.2	..	....
10-11	..	....	..	....	..	....	..	....	35	12.1	..	....

TABLE B.—EXPERIMENTS WITH MEAT AND MEAT PRODUCTS.

Protocol No.	7		8		9		10		11	
Meal.	500 gm. beefsteak chopped.		600 gm. beefsteak chopped.		Water extract of 500 gm. beefsteak.		Residue after extraction of 500 gm. beefsteak.		Coagulable proteins extracted from 500 gm. beefsteak.	
Urine.	Volume. c.c.	Uric acid. mg.	Volume. c.c.	Uric acid. mg.	Volume. c.c.	Uric acid. mg.	Volume. c.c.	Uric acid. mg.	Volume. c.c.	Uric acid. mg.
Hour.										
8- 9	42	18.6	..	....	35	15.2	78	22.6	..	....
9-10	35	16.7	21	19.0	30	15.3	60	20.0	31	18.6
10-11	28	12.4	18	17.2	22	11.0	55	17.8	40	18.9
11-12	29	16.1	25	21.2	22	11.0	54	17.8	15	16.0
12- 1	30	13.8	25	19.4	30	12.7*	40	17.6	29	15.3
1- 2	58	41.6*	41	28.0*	40	30.6	41	14.4*	31	24.8*
2- 3	85	79.2	88	88.2	44	43.0	42	24.8	22	22.6
3- 4	95	78.1	103	98.2	32	29.2	43	28.1	24	22.9
4- 5	95	71.1	88	79.5	33	22.2	42	21.9	29	25.9
5- 6	80	45.9	82	73.0	44	18.2	45	23.5	38	28.1
6- 7	90	45.9	101	51.8	37	20.7	60	18.6	29	22.2
7- 8	99	44.9	115	36.0	41	17.5	63	13.5	30	17.8
8- 9	105	31.0	87	25.4	36	18.4	66	18.2	35	19.3
9-10	72	29.2	66	22.3	..	....	51	15.6	33	17.8

TABLE C.—EXPERIMENTS WITH GLANDULAR AND OTHER PURIN-YIELDING TISSUES.
(Liver.)

Protocol No.	12		13		14		15	
Meal.	About 400 gm. liver.		About 500 gm. liver.		Residue after extraction of 500 gm. liver		Water extract of 500 gm. liver.	
Urine.	Volume. c.c.	Uric acid mg.	Volume. c.c.	Uric acid mg.	Volume. c.c.	Uric acid mg.	Volume. c.c.	Uric acid mg.
Hour.								
8- 9	26	19.3	..	....	..	....	45	25.9
9-10	26	23.3	40	16.4	25	16.2	40	23.7
10-11	23	24.8	38	17.5	28	13.3	42	24.8
11-12	28	19.2	44	17.1	31	13.0	67	38.9*
12- 1	21	18.3	31	11.6	29	17.1	63	45.3
1- 2	23	19.5*	32	18.7*	26	19.8*	58	39.9
2- 3	26	57.3	55	33.5	35	34.2	43	27.7
3- 4	59	80.3	74	66.0	34	35.6	37	28.0
4- 5	63	90.5	70	83.9	36	54.0	40	21.8
5- 6	64	63.8	78	85.0	43	53.6	25	24.9
6- 7	70	54.7	66	50.3	49	44.6	35	21.9
7- 8	53	46.3	66	43.4	28	45.3	..	....
8- 9	51	29.1	75	39.4	32	36.7	..	....
9-10	49	27.8	68	40.8	30	38.8	..	....

TABLE D.—EXPERIMENTS WITH GLANDULAR AND OTHER PURIN-YIELDING TISSUES.
(Pancreas.)

Protocol No.	16		17		18	
Meal.	400 gm. pancreas.		Water extract of 500 gm. pancreas.		Residue after extraction of 500 gm. pancreas.	
Urine.	Volume. c.c.	Uric acid. mg.	Volume. c.c.	Uric acid. mg.	Volume. c.c.	Uric acid. mg.
Hour.						
8- 9	..	....	..	....	33	16.5
9-10	27	13.8	25	10.0	31	15.4
10-11	25	12.7	27	10.2	27	16.5
11-12	30	9.8	35	13.6	31	14.4
12- 1	30	11.6	28	11.3	46	20.1*
1- 2	44	16.4*	30	11.2	60	41.4
2- 3	35	43.8	27	10.4	105	52.9
3- 4	32	40.9	28	13.6*	43	45.8
4- 5	36	50.7	30	23.7	53	32.4
5- 6	43	50.0	60	46.4	31	34.2
6- 7	52	48.5	55	46.0	40	23.4
7- 8	38	26.9	61	15.4	59	19.2
8- 9	40	35.7	63	15.7	47	16.5
9-10	39	28.5	62	15.6	43	17.4
10-11	33	37.5	70	13.6	48	15.2

5. Am. Jour. of Physiol., 1904, xii, 13.
6. Ztschr. f. physiol. Chem., 1904, xl, 1.
7. Ztschr. f. physiol. Chem., 1904, xl, 25.

8. The estimation of uric acid was made by Hopkins' method.

The plan of the experiments was simple. After an evening meal, usually taken at 6:30, no food was consumed until the experimental meal of the following day. Marés believed that the uric acid output per hour attains a nearly constant level from the thirteenth to the twenty-fourth hour of fasting. We therefore collected the urine in hourly periods during several hours on the morning of the experimental day. The test meal was most frequently taken at 1 p. m. and the hourly collections of urine and estimations of uric acid continued during the subsequent eight or ten hours. The meals were varied in character to show the influence of low protein and high protein foods, both rich in and devoid of purins, either free or combined. Some of the data of each experiment. These are, however, not directly comparable, for some of the experiments were necessarily ended before the uric acid curve had returned to its abstinence level. In such cases the increments represented are too small. A representation of the relative increment during some fixed period, e. g., the first five hours after the meal, would likewise have been misleading in so far as the quantity of purin ingested was not alike in all cases.

EXPERIMENTS WITH PURIN-FREE TEST MEALS.

The ingestion of a purin-free meal is followed by a minimal rise in uric acid output above the abstinence values during the hours immediately following the ingestion of the food. When larger quantities of protein, such as the purin-free egg-proteins (Experiments 5 and 6, Table A, Figs. 5 and 6), are included the rise is somewhat larger. In none of cases, however, is the postprandial rise comparable in extent with that observed in the later experiments with purin-yielding foods. The questions of the influence of food *per se* on the endogenous output of uric acid has been variously answered. The careful experiments of Rockwood[10] have failed to indicate any noteworthy change in the uniform daily endogenous uric output when considerable quantities of non-nitrogenous food were added to the fixed ration. Mohr and Kauffmann,[11] however, believe that the individual endogenous constant varies somewhat with the total calorific intake. On a protein-free diet Folin[2] and Jackson and Blackfan[2] have described a low total output of purins, and von Wendt[12] has noted variations in the endogenous excretion in the same individual when the protein and total calorific intake was varied in wide limits. None of the investigators have considered the immediate influence of such quantitative

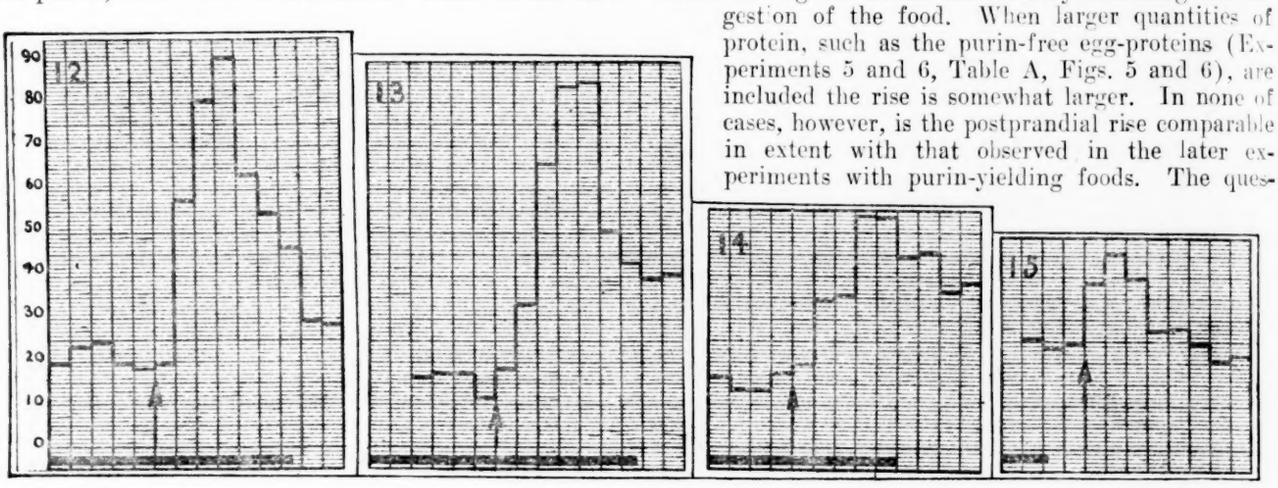

Fig. 12.—(Table C.) Test meal of about 400 gm. liver.
Fig. 13.—(Table C.) Test meal of about 500 gm. liver.
Fig. 14.—(Table C.) Test meal of residue after extraction of 500 gm. liver.
Fig. 15.—(Table C.) Test meal of water extract of 500 gm. liver.

are submitted in tabular form (Tables A to G). The asterisk (*) indicates the hour at which the test meal was ingested. The charts (Figs. 1 to 31) give a graphic representation of the results, the ordinate units representing milligrams of uric acid and the abscissa units expressing successive hourly periods. The time at which the test meal was ingested is indicated by the vertical arrow in each chart. Finally the total increment of uric acid output above the abstinence output[9] is shown in a comparative way by a horizontal line beneath the record

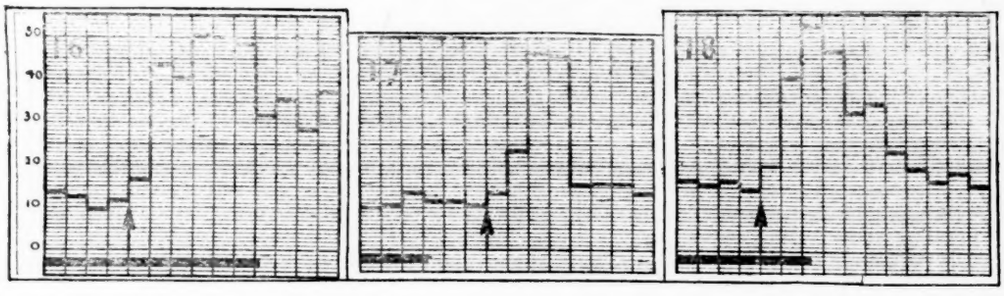

Fig. 16.—(Table D.) Test meal of 400 gm. pancreas.
Fig. 17.—(Table D.) Test meal of water extract of 500 gm. pancreas.
Fig. 18.—(Table D.) Test meal of residue after extraction of 500 gm. pancreas.

9. It may be remarked here that the hourly abstinence values are by no means alike on the various experimental days. A perfect uniformity is scarcely to be expected without greater attention to the constancy of the diet on the days preceding the experiments. While the level of uric acid excretion during the morning hours thus varied from day to day, the abstinence values from hour to hour were sufficiently uniform to show distinctly the postprandial changes in excretion. The important features of the data are, therefore, not the figures for the absolute output per hour, but rather the form of the elimination curve—the rate of elimination as influenced by the diet—and the total increase of purin output above the abstinence values for the experiment under study.

10. Am. Jour. of Physiol., 1904, xii, 38.
11. Archiv. f. experiment. Pathol. u. Pharmakol., 1902, lxxiv, 141, 348.
12. Skandinav. Archiv. f. Physiol., 1905, xvii, 231.

food variations on the rate of elimination. That the postprandial rise is not attributable simply to increased diuresis is evident from inspection of our protocols, in which hourly volumes of urine secreted are recorded. The coincidence of large volume and increased uric acid output is accidental and by no means constant. The independence of these factors is also shown in an experiment by Beebe,[5] in which an enormous diuresis (565 c.c. of urine per hour) produced by alcohol was without

TABLE E.—EXPERIMENTS WITH GLANDULAR AND OTHER PURIN-YIELDING TISSUES.
(Thymus; Spleen.)

Protocol No.	19		20		21		22	
Meal.	480 gm. thymus.		560 gm. thymus.		340 gm. spleen.		Water extract of 450 gm. spleen.	
Urine.	Volume. c.c.	Uric acid. mg.	Volume. c.c.	Uric acid. mg.	Volume. c.c.	Uric acid. mg.	Volume. c.c.	Uric acid. mg.
Hour.								
7- 8	..	....	29	19.4	..	....	..	....
8- 9	..	....	31	31.3*	..	....	..	....
9-10	26	23.4	63	33.9	26	18.2	25	19.1
10-11	26	23.0	80	34.6	31	19.7	27	21.2
11-12	27	22.3	74	69.8	30	17.5	26	20.9
12- 1	26	19.4	54	58.3	32	18.3	34	28.4*
1- 2	33	25.9*	58	43.2	35	20.0*	30	43.2
2- 3	45	42.4	60	68.8	46	71.5	41	40.3
3- 4	60	56.5	45	62.6	43	66.2	32	29.1
4- 5	56	64.0	32	42.1	60	76.2	27	23.7
5- 6	43	57.6	33	55.1	61	86.1	26	21.2
6- 7	53	52.5	..	....	48	47.4	30	17.6
7- 8	50	49.7	..	....	50	55.1	31	15.5
8- 9	62	69.5	..	....	76	45.0	..	....
9-10	66	52.2	..	....	66	42.4	..	....
10-11	..	....	..	....	59	36.0	..	....

TABLE F.—EXPERIMENTS WITH GLANDULAR AND OTHER PURIN-YIELDING TISSUES.
(Kidney; Brain; Lymphatic Glands; Haddock Roe.)

Protocol No.	23		24		25		26	
Meal.	500 gm. kidney.		500 gm. brain.		300 gm. lymphatic glands.		400 gm. haddock roe.	
Urine.	Volume. c.c.	Uric acid. mg.	Volume. c.c.	Uric acid. mg.	Volume. c.c.	Uric acid. mg.	Volume. c.c.	Uric acid. mg.
Hour.								
7- 8	36	19.8	27	19.4	..	....	..	....
8- 9	51	29.9*	38	18.0	38	24.1	..	....
9-10	88	64.1	41	17.2*	37	24.5	23	19.1
10-11	76	59.4	49	40.0	31	23.0	27	17.6
11-12	58	51.8	52	52.5	35	25.0	21	43.2*
12- 1	54	52.2	46	38.8	28	20.2	40	61.5
1- 2	53	39.8	41	37.0	32	41.3*	43	69.1
2- 3	48	28.8	50	37.0	40	52.8	52	80.3
3- 4	50	22.7	53	28.4	48	63.0	49	91.4
4- 5	48	26.3	61	28.0	47	57.4	60	69.1
5- 6	41	24.2	42	22.6	58	49.3	63	62.3
6- 7	..	....	39	24.8	45	49.0	70	55.4
7- 8	..	....	..	....	43	48.0	61	58.7
8- 9	..	....	..	....	52	64.0	42	51.1
9-10	..	....	..	....	47	35.0	..	....

noteworthy effect on the quantity of endogenous uric acid excreted during the same time. The experiments of Leathes[2] likewise indicate that the alterations in uric acid output are not attributable to variations in renal activity.

EXPERIMENTS WITH MEAT AND MEAT PRODUCTS.

The influence of meat on the production and elimination of uric acid is well recognized. Von Noorden has introduced the method of determining the quantity of uric acid eliminated after digestion of a known amount of meat as a test for the capacity of the body to metabolize the purins of the diet. This function, indicative of the tolerance of the body for purins, appears to be subject to alterations in pathologic conditions. The contributions from von Noorden's clinic have not touched on the time relations in this activity. The purin precursors exist in muscle tissue for the most part in the form of free purin bases, hypoxanthin and xanthin, the quantity of nucleoprotein (combined purins) being very small. The metabolism and oxidation of the purins present is readily effected, as indicated by the rapid increase in uric acid elimination after ingestion of meat in Experiments 7 and 8 (Figs. 7 and 8, Table B). The aqueous extract of a comparable quantity of chopped meat (Experiment 9, Fig. 9, Table B) was also very effective, as might be expected from what was noted

TABLE G.—EXPERIMENTS WITH NUCLEOPROTEIN PREPARATIONS.

Protocol No.	27		28		29		30		31	
Meal.	15 gm. pancreas nucleo-protein, crackers.		30 gm. pancreas nucleo-protein, 5 eggs.		10 gm. thymus nucleo-protein, crackers.		20 gm. thymus nucleo-protein (in NaOH).		20 gm. yeast nuclein (in NaOH).	
Urine.	Volume. c.c.	Uric acid. mg.	Volume. c.c.	Uric acid. mg.	Volume. c.c.	Uric acid. mg.	Volume. c.c.	Uric acid. mg.	Volume. c.c.	Uric acid. mg.
Hour.										
6- 7	..	....	27	17.4	..	....	..	....	..	....
7- 8	..	....	34	18.3	..	....	..	....	..	....
8- 9	..	....	29	63.3*	..	....	..	....	22	20.8
9-10	28	18.2	33	68.0	31	17.5	40	20.5	22	30.5
10-11	33	18.4	46	74.1	27	19.6	38	21.6	32	55.8*
11-12	27	16.4	52	90.3	25	18.2	48	42.8*	38	57.6
12- 1	20	17.8	71	86.0	21	16.8	48	42.4	38	52.5
1- 2	30	39.4*	61	95.4	23	15.7*	50	36.0	30	42.1
2- 3	27	47.0	51	69.8	25	25.9	52	32.4	31	32.7
3- 4	29	48.5	47	34.9	26	25.9	54	30.9	22	32.4
4- 5	30	35.7	35	41.7	28	22.0	42	30.0	28	34.9
5- 6	32	44.2	31	33.1	31	26.9	42	27.0	28	33.4
6- 7	36	41.6	..	....	32	30.1	..	....	..	....
7- 8	40	38.0	..	....	24	28.0	..	....	..	....
8- 9	36	32.8	..	....	31	28.3	..	....	..	....

above; the residue left after this extraction (Experiment 10, Fig. 10, Table B), as well as the flesh proteins obtained by coagulation of the watery extracts (Experiment 11, Fig. 11, Table B), provoked responses like other purin-free foods.

EXPERIMENTS WITH GLANDULAR AND OTHER PURIN-YIELDING TISSUES.

These tissues are characterized chemically by their richness in nucleoproteins in addition to the "free" purin bases. This is illustrated by the following figures:[13]

PURIN CONTENT OF COMMON FOODS.

	Total Purin Nitrogen. *Per cent.*	Free Purin Nitrogen. *Per cent.*	Combined Purin Nitrogen. *Per cent.*
Meat	0.06	0.045	0.015
Liver	0.12	0.033	0.087
Thymus	0.45	0.042	0.408
Spleen	0.16	0.046	0.114

Corresponding with this fact, it will be observed in the feeding experiments that these uric acid precursors induce a very marked rise in the elimination curve, persisting over a somewhat longer period of time than in the previously reported experiments. This persistence of the high level may be attributed to several causes; most probably the chief factor lies in the nucleoprotein combinations present from which the purin bases must first be liberated before they can serve in the elaboration

13. From Burian and Schur: Archiv. f. d. gesammte Physiol., 1900, lxxx, 308.

of uric acid. The soluble and "free" purins are ready for speedy absorption and metabolism; the "combined" purins do not enter into these changes until they are set free by digestive reactions through the cooperation of nucleases. The distinction between meat and liver, for example—two food materials respectively poor and rich in "combined" purins—is emphasized by their influence on the postprandial uric acid curves. The residues left after extraction of free purins from meat afford only a small rise (Experiment 10, Fig. 10, Table B). In the corresponding experiments on the liver, on the other hand, the residue and extract are both effective in eliciting a rise in uric acid output (Experiments 12, 13, 14, 15; Figs. 12, 13, 14, 15; Table C). With the extract it is of brief duration; the residue, rich in so-called nuclein products, only slowly experiences disintegration in the digestive tract, with corresponding prolongation of the period of elimination. In all these cases an added factor of importance, as yet entirely underestimated, concerns the rate of discharge of different foods from the stomach. Cannon[14] has called attention to this in his studies on the motor activities of the alimentary tract. It is obvious that any interference with the normal progression of the intake to the places of absorption must directly influence the rate at which the products formed are eliminated. We need more defi-

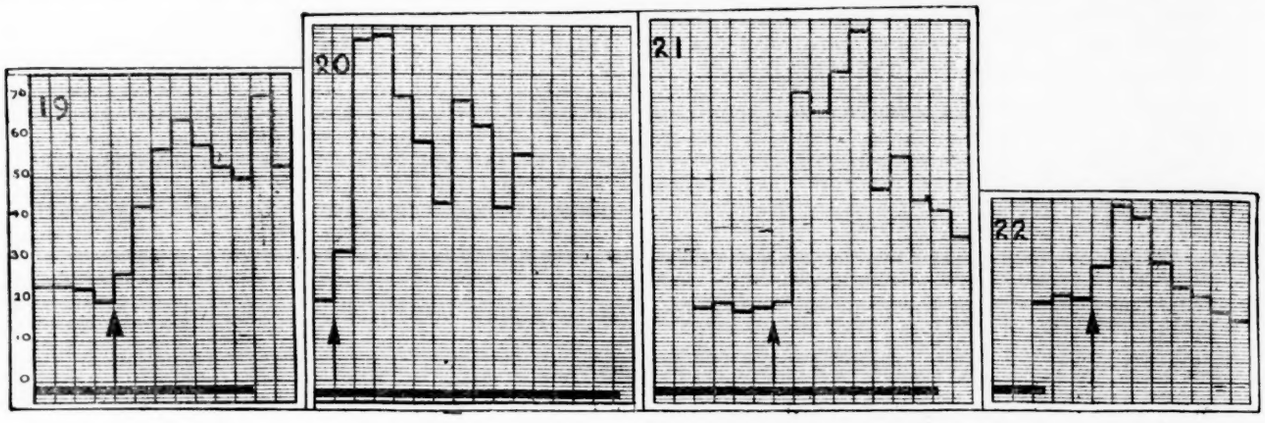

Fig. 19.—(Table E.) Test meal of 490 gm. thymus.
Fig. 20.—(Table E.) Test meal of 560 gm. thymus.
Fig. 21.—(Table E.) Test meal of 340 gm. spleen.
Fig. 22.—(Table E.) Test meal of water extract of 450 gm. spleen.

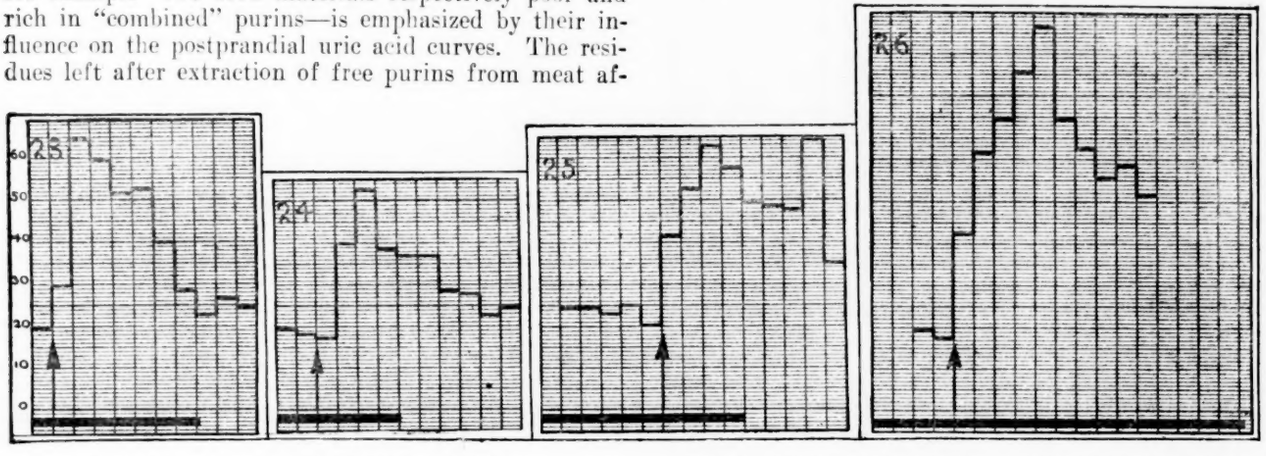

Fig. 23.—(Table F.) Test meal of 500 gm. kidney.
Fig. 24.—(Table F.) Test meal of 500 gm. brain.
Fig. 25.—(Table F.) Test meal of 300 gm. lymphatic glands.
Fig. 26.—(Table F.) Test meal of 400 gm. haddock roe.

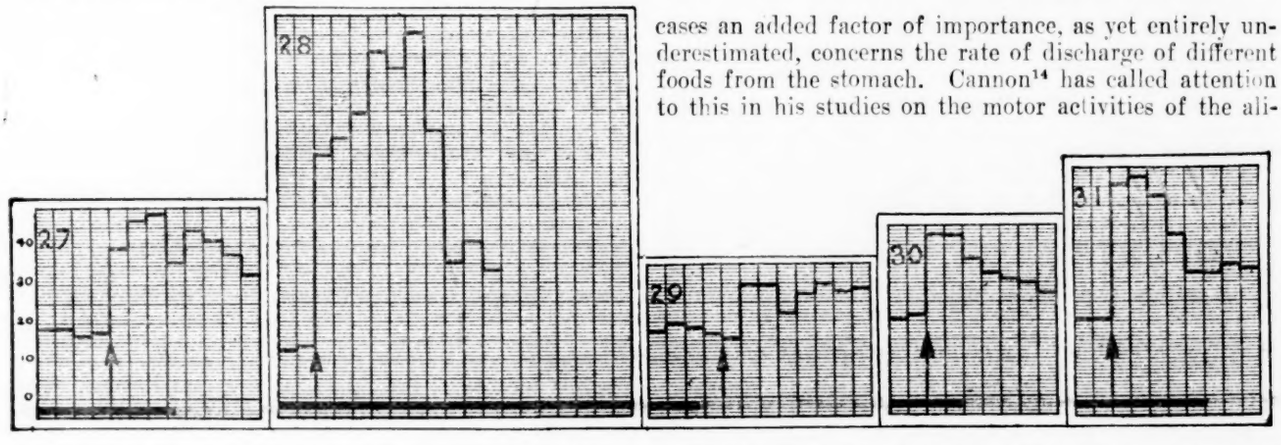

Fig. 27.—(Table G.) Test meal of 15 gm. pancreas nucleoprotein, with crackers.
Fig. 28.—(Table G.) Test meal of 30 gm. pancreas nucleoprotein; 5 eggs.
Fig. 29.—(Table G.) Test meal of 10 gm. thymus nucleoprotein, with crackers.
Fig. 30.—(Table G.) Test meal of 20 gm. thymus nucleoprotein (in NaOH).
Fig. 31.—(Table G.) Test meal of 20 gm. yeast "nuclein" (in NaOH).

14. Am. Jour. of Med. Sci., April, 1906.

nite information regarding the behavior of the foods here under consideration in this respect. Only when such knowledge is available can the factors modifying the rate of chemical transformation of the foods be properly interpreted.

The other glandular tissues examined all yielded the typical postprandial curve of uric acid elimination. This is true of pancreatic gland (Experiments 16, 17, 18, Figs. 16, 17, 18, Table D); thymus (sweetbreads) (Experiments 19 and 20, Figs. 19 and 20, Table E), spleen (Experiments 21 and 22, Figs. 21 and 22, Table E; kidney (Experiment 23, Fig. 23, Table F), brain (Experiment 24, Fig. 24, Table F), lymphatic glands (Experiment 25, Fig. 25, Table F), and haddock roe (Experiment 26, Fig. 26, Table F). The prolonged period of high elimination is very pronounced in those tissues rich in "combined" purins, such as thymus and fish roe.

From the foregoing illustrations selected from our numerous protocols it is evident that the character of the test meal is not without marked influence on the type of postprandial elimination curve. The ready response in uric acid output is, however, a constant and characteristic feature, as well as the marked tendency toward a distinct maximum. It will be recalled that in these features the pathologic cases cited by Soetbeer[7] showed abnormal behavior; and to these points future studies on the pathology of purin metabolism should be specifically directed.

EXPERIMENTS WITH NUCLEOPROTEIN PREPARATIONS.

In order to follow more closely the fate of some of the combined purins which occur in nature as nucleoprotein compounds, feeding experiments were made with isolated products. Pancreas nucleoprotein was prepared from sheep's pancreatic glands by extraction with boiling water and precipitation of the concentrated extract with alcohol. The metabolism of the product is shown in Experiments 27 and 28 (Figs. 27 and 28, Table G). The elimination curve remains a longer time at a high level than when free purins are ingested. Thymus nucleoprotein obtained by precipitation of the watery extracts of the gland with dilute acetic acid gave results exemplified in Experiments 29 and 30 (Figs. 29 and 30, Table G). With yeast "nuclein" the results were most conspicuous when the product was administered in solution (Experiment 31, Fig. 31, Table G), and the slow digestion of the product is perhaps accountable for the prolongation of the excretion curve.

The foregoing experiments indicate a typical reaction of the human organism to diet as illustrated in the rate and extent of uric acid elimination under a large variety of conditions. The response is speedy and characteristic, as the charts show. The limitations of any research, however extensive, which is confined to a single individual, are patent. We believe that the method of study employed is worthy of some consideration at the hands of the clinical investigator.

DISCUSSION.

DR. FENTON B. TURCK, Chicago, said that the feeding of meat extractives may have some bearing on this question, as he has observed certain changes in the feces and urine, for instance, increased output of xanthin and hypoxanthin. It is exceedingly interesting to note that in many of these animals the pathologic conditions that follow are not always in direct ratio to the changes found in the metabolic processes. The simple metabolic changes can not be used as an index of the pathologic conditions produced, for other conditions are found in the metabolism that appear to be more than certain metabolic changes and rate of elimination which have been heretofore recognized. Dr. Turck said that he favors the hypothesis that some not well understood substances are formed that pass into the blood and remove from the blood certain protective bodies, and the rate of elimination of uric acid has not given the indication of the actual process.

DYNAMIC ILEUS.*

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The term ileus signifies not a disease, not a symptom, but a group of symptoms associated with many and widely varying causes. These symptoms are abdominal pain, nausea or vomiting, distension and intestinal obstruction. The relative importance of each symptom varies in the individual case, while collectively they may indicate a condition that varies between harmless postoperative discomfort and a rapidly fatal obstruction.

The simplest classification of ileus includes, on the one hand, the mechanical type, where the intestinal obstruction is due to some form of physical interference with the intestinal current, and, on the other hand, the dynamic ileus, in which the obstructions are secondary to some interference with the neuromuscular mechanism of the gut. In the mechanical class we should include stricture, tumors, invaginations, bands, etc. In the dynamic class would fall those cases due to peritonitis, trauma, sepsis, reflex irritations, spinal lesions, etc. But even in the latter class the obstructions due to peritonitic kinking may be, to all intents and purposes, mechanical. Furthermore, different forms of both mechanical and dynamic ileus may be present in the same patient, as we see in cases of stricture with beginning peritonitis and toxemia.

It would be a distinct gain to medical nomenclature if the term ileus could be abolished, thus compelling the diagnostician to define his case of intestinal obstruction as secondary to stricture, to peritonitis, to toxins, etc., as the case might be. For the sake of discussion, however, I will retain the word, but, as it would be impossible in a short paper to consider each one of the numerous varieties of non-mechanical ileus, I will take up only that which is seen both before and immediately after abdominal operations. In this form of ileus the obstruction may be acute and rapidly fatal, or it may be mild, subsiding spontaneously and never threatening life. Not infrequently is the intestinal paresis that follows a laparotomy ascribed to a functional neurosis, but Kocher gives little encouragement to this explanation. He maintained some years ago that such a paralysis is sequent to a serous inflammation, even if very slight, or to circulatory disturbances secondary to the operation itself. To emphasize these views is my purpose here.

It would be well for the general practitioner to rid himself of the idea that the syndrome pain, vomiting, distension and obstruction is, except in the rarest instances, caused by functional disturbances, by drugs, such as morphia, by hysteria or other non-organic conditions. He should search first for septic, traumatic or mechanical causes, then for reflex and, lastly, for functional causes. Rarely will he see a genuine case of the latter. Dynamic ileus almost always represents the result of a sepsis of the peritoneum or a toxin affecting

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

the motor mechanism of the intestines. To differentiate even these varieties is difficult but important, because the treatment of one variety differs much from that of the other.

A purely functional paralysis of nervous origin may exist, according to Nothnagel, but it is rare. He has seen it after paracentesis for advanced ascites, and it is possible that this variety of ileus may contribute to the exaggerated distension that follows the removal of large cysts or fibroids where there has been a minimum of intestinal handling. Cases of distension of this class also are reported after injuries to the testis, extraperitoneal operations on the kidney, etc.

The non-fatal distension that follows blunt contusion of the abdomen may be from a reflex or functional paralysis, but it is much more reasonable to suppose that it is secondary to the contusion of a loop of gut or its mesentery, too slight to produce the usual secondary necrotic changes.

The distension and obstruction that we see in patients ill with abdominal disorders and before operative interference are in most instances due primarily to a peritonitis. In our experience it is the exception to be called to operate for intestinal obstruction and not to find a case of appendicitis or other infective peritonitis, simple at the outset, but made serious by persistent endeavors, on the part of the patient or his doctor, to force a passage through the intestinal tract. Relatively seldom do we see the true mechanical acute obstruction, but when we do the general picture is so different that the diagnosis of obstruction without peritonitis ought to be made easily.

That toxins independent of those generated by an intra-abdominal lesion may cause ileus is seen in the cases of distension that are found with pneumonia, and more rarely with acute nephritis. Either of these may be confused with the ileus due to abdominal inflammation because the four components of the syndrome are present, but the fifth and distinguishing sign, surgical spasm, is always absent. By what channels these extra- and intra-abdominal toxins produce paralysis is not clear. It may be through the visceral muscles or through the motor supply.

The researches of Durham point to infection of the peritoneum as the cause of ileus in the fulminating cases seen after operation, or in sudden intra-abdominal lesions that do not come to operation. In such instances a superficial examination would seem to rule out the presence of a peritonitis because the gross evidences are so very slight, whereas the omentum and the mediastinal glands will show the presence of abundant microorganisms. The recent experiments of Buxton corroborate this. Cases of this sort have been described by Robson, Stengel and others as acute peritoneal infection rather than as peritonitis.

It is remarkable how slight a degree of peritonitis will stop peristalsis, especially in the cachetic or anemic. Every surgeon will now and then see a fatal case of ileus or toxemia in a patient with far advanced malignant disease coexistent with an amount of mild local peritonitis that would never disturb a healthy individual. Finney and other writers have emphasized this fact. In a few personal calamities of this nature we had been inclined, before death, to ascribe the obstruction to a kink or a twist, or even to a functional neurosis, but autopsy has clearly demonstrated as the true cause a small, mild, local peritonitis. Furthermore, a critical analysis of our cases of mild and severe ileus at the Carney Hospital shows peritoneal sepsis or prolonged manipulation to be the most obvious cause for the condition.

The ileus that follows a clean laparotomy where there is every reason to eliminate operative sepsis is probably due to peritoneal or intestinal trauma; but even so, it is by no means safe to exclude some degree of septic infection as cause or association. It is interesting to note that operations on patients with preexisting septic foci, who have already acquired some degree of immunity, suffer comparatively little from distension. On the other hand, a very slight intra-abdominal operation in an acute case, before immunity to toxins has been acquired, will arouse an intense and perhaps fulminating ileus. On this account delay in operating on septic diseases of the peritoneum is occasionally wise.

Distension alone is of moment because it is well proven that toxins may penetrate a normal intestinal wall when distended and cause a peritonitis in the region of their passage. If the wall has been damaged by disease or by surgical manipulation, this phenomenon takes place much more readily. Hence we see that a distension alone, even if there is only incomplete obstruction, is or may be a source of danger. In addition to the passage of toxins, numerous changes may take place in the gut itself, varying from a hyperemia and infarcts to ulceration and gangrene. Coincident with these pathologic changes is the ever-increasing absorption of toxic products and pressure against the diaphragm.

Absorption of the gases of fermentation takes place to a considerable extent from the healthy intestine. Any damage to the wall quickly impairs the absorption of liquids as well as of gases. As the fermentation increases the distension increases, the circulation of the gut wall is impaired and absorption is rendered more difficult, so that a vicious circle is quickly established. Experiments show that the toxins from an obstructed intestine are far more virulent than those from a healthy gut. For this reason it is important to eliminate as much toxic material as possible by lavage both of the stomach and of the colon. Finney calls especial attention to restlessness as a characteristic symptom of toxin poisoning.

Another cause of ileus that the surgeon must ever consider in his work is mechanical injury to the intestine or mesentery, especially that portion derived from the midgut. Cannon and Murphy's experiments on cats demonstrate the harmful effects of manipulation. Anesthesia or exposure alone is far less important. The cessation of intestinal activity after injury is apparently a conservative phenomenon. It allows repair to take place in order that peristalsis may be re-established. Where the damage is local and the consequent paresis is loval, a reversed peristalsis of the proximal gut is found, the quiescent, damaged section acting much as though it were mechanically occluded. These observers have also shown that the effect of injury to the intestine is much more serious in the debilitated and anemic, a fact which every surgeon has seen clinically.

It is well to bear in mind that in a well-marked case of ileus there is bound to be more or less shock and that the additional shock of even a slight operation may prove fatal.

Treatment depends on our distinguishing, first of all, the different types of dynamic ileus, whether peritonitic,

traumatic, toxic or reflex as applied to cases before and after operation.

To consider the peritonitic type, first of all, we can safely say that it may be differentiated by the presence of surgical spasm, elevated pulse and temperature and leucocytosis. Excluding the fulminating cases of this or any type for which the treatment is the same, it is a grievous error to attempt forcible passage of flatus or feces by the repeated administration of cathartics. If the case is seen before operation, this is doubly emphatic, and there is no surgeon who has not seen scores of cases of severe or fatal ileus created in a patient with a mild peritoneal lesion, originally, by the persistent administration of one cathartic after another. Where there is a definite focal cause, like an appendix or a gall bladder or a tube, it must be removed sooner or later. It can be pretty safely said that the distension and obstruction that comes with a local peritonitis rarely of itself demands operation unless to remove the contributing cause. It seems appropriate to emphasize by reiteration the warning against the use of cathartics, beyond a very slight degree, in cases of so-called obstruction where there is any possibility of its being mechanical or infective. The increase of peristalsis destroys the barriers already constructed by Nature against further infection; the augumentation of intestinal fluids favors putrefaction and absorption of toxins; the resultant distension favors bacterial emigration into the peritoneal cavity already actively septic. Thus a mild ileus will develop into a general paralytic ileus with complete obstruction and toxemia.

The treatment of the early stages of distension in almost all cases is non-operative. The treatment of late (mechanical) ileus is always surgical. Rarely is it necessary to meet a reflex or a toxic ileus by other than palliative means. Rarely must we meet a peritonitic or a traumatic ileus by operation for the ileus alone. Every type, however, now and then may be so rapidly fulminating that enterostomy is imperative to prevent a secondary mechanical obstruction, infection or gangrene from over-distension, thrombosis, etc. At what stage this interference is demanded depends on the surgeon's experience in dealing with abdominal lesions, on the general condition of the patient and on the result of palliative therapy. An early enterostomy when necessary will often save life when the same operation a few hours later would kill.

Even distension attended by partial obstruction may need surgical relief quite as imperatively as one attended by complete obstruction, depending on the absorption of toxins from the gut and on the interference with the diaphragm. All such cases, especially the subacute, are poor subjects for a secondary operation. Patients with acute, rapidly fulminating ileus will bear an enterostomy better, relatively, because the toxemia or copremia, or whatever it is that proves so fatal, has existed for only a short period.

In the milder peritonitic types it is better to rely on the elimination of the intestinal contents, both gaseous and liquid, from below. Cathartic enemata, antispasmodics, irrigation of both the stomach and colon, the administration of salt solution by rectum (to aid elimination through the kidneys), and the rectal tube are the best therapeutic measures that we have.

Enterostomy to forestall a possible ileus we believe to be rarely indicated. Even in the presence of considerable distension due to a septic focus is it but rarely justified, as a primary step, because removal of the causative focus will generally relieve the ileus, provided there has not been too much operative damage done to the viscera.

In the rare cases of obstruction from enteric spasm as seen in biliary or renal colic and, judging from our experience, in similar rare cases of peritoneal trauma and infection, it is well to use morphin, which, by diminishing the pain, favors peristalsis and thus acts as a cathartic.

Patients with pure traumatic ileus rarely require surgical relief unless a mechanical ileus or secondary necrosis supervene. The routine case is best treated as the mild peritonitic case is, by enemata, lavage, etc.

In conclusion, I would suggest that the intestinal obstruction commonly seen before and immediately after operation is, for the most part, secondary to some degree of peritoneal infection or mechanical injury. That when there is a definite local focus, this and not the ileus requires operative treatment. That the variety of ileus under discussion may be confused with the reflex or toxic types, but that the latter do not exhibit spasm, fever and leucocytosis. That because of the toxin absorption, the secondary changes in the gut and other sequelæ, it is of the greatest moment to empty the intestines of their contents by enemata and lavage and to re-establish peristalsis.

However much comfort we may take out of the fact that the peritoneal cavity disposes of large quantities of septic material, it behooves us in any operation to introduce as little foreign septic material as possible and to inflict the minimum amount of damage on the peritoneal organs. Slight sepsis and slight trauma will cause some degree of ileus; they may cause fatal ileus, and we must be willing to admit that the discomfort which follows our laparotomies is much more likely to be secondary to some degree of sepsis or trauma than to the neurologic idiosyncrasies of our patients.

RESECTION FOR THE RELIEF OF INTESTINAL OBSTRUCTION.*

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The frequent necessity of resection for the relief of intestinal obstruction is a somber commentary on the diagnostic ability of the profession. In the very large majority of cases, delay in surgical interference is responsible rather than the primary cause of the ileus. The favorable cases are those in which there is interruption to the fecal current without vascular strangulation. The need for resection, however, usually arises from the damage to the blood supply rather than from blocking of the intestinal lumen.

The important considerations are, first, the extent of vascular involvement; second, the degree of infection; third, amount and toxicity of the obstructed intestinal contents. The upper intestinal tract is comparatively free from pathogenic bacteria. Their number and virulence gradually increase toward the ileocecal orifice, and as demonstrated by Herter, the terminal two feet of the ileum teem with these organisms. The walls of the empty intestine are comparatively thick and wonderfully supplied with blood, and in this condition, as shown by

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

Dudgeon and Sargent, are entirely competent to prevent penetration of micro-organisms, but if the fecal current be obstructed, the distension seriously impairs the blood supply, the contents rapidly become infected and the intestinal walls may no longer be able to prevent the egress of bacteria, and some escape into the peritoneal cavity from the excessively distended part where the circulation is grossly impeded. For a time these invading micro-organisms are picked up by the omentum, according to Mr. Bond, but general septic peritonitis soon supervenes. The intestine above the obstruction becomes filled with fluids which are not only most infectious, but also contain poisonous chemical products.

Regurgitation of this material into the stomach requires careful emptying by gastric lavage before operation, for the reason that the regurgitated intestinal contents not only depress the patient, but its toxins may cause acute gastric dilatation. McArthur and Andrews have particularly called attention to the possibility of fecal drowning during operation, through the vomiting up of large quantities of fluids into the esophagus and aspiration into the lungs.

Treves says that the mortality of resections for intestinal obstruction was decreased one-half after it became customary to evacuate the intestinal contents through an incision, instead of allowing it to pass down into the healthy distal intestine where it was absorbed. Evacuation is best accomplished after the method described by Monks. Through a small intestinal incision, he introduces a long drainage tube or blunt ovariotomy trocar into the lumen, slipping coil after coil over it as it is emptied.

Vascular changes in the intestine above the obstruction are greatly increased by the distension and local toxic effect of the contained liquids. For this reason it is necessary to go well above the seat of the disease to secure healthy intestine. A considerable percentage of the deaths following resection are due to perforation from thrombosis, and the utmost care should be taken in handling the distended intestine not to increase the vascular damage.

In searching for the seat of obstruction it is wise to go down to the ileum at the cecal termination and endeavor to find the collapsed intestine and trace this to the point of disease, rather than handle the distended gut. If the abdominal incision is badly placed, so that one can not reach the seat of obstruction without tension on the mesentery, it is better to make a second more advantageous working incision. This is particularly true of strangulated femoral hernia. Here it is advisable to open the abdomen above Poupart's ligament, reduce the gangrenous loop into the abdominal cavity and bring it out of the upper incision so that resection may be easily accomplished.

RESECTION OF THE SMALL INTESTINE.

Lateral anastomosis with end closure by the two-row suture method, we believe to be the safe resection for *acute* obstruction of the small intestine. It keeps away from the dangerous mesenteric border with its contained blood vessels and makes the anastomosis at a point where there is adequate peritoneum and the tissues are healthy. The fact that the contents of the small intestine are in a fluid state, adds much to the safety. The intestine can be quickly crushed with heavy clamps and tied in the groove with catgut and the ends inverted like the stump in appendectomy and closed with a linen purse-string suture. More of the bowel should be removed opposite the mesentery, so that there will be no question as to the vitality of the part retained. The intestine should be held by clamps and the anastomotic opening made at least three inches in length, a point insisted on by Robert Abbe in his original work on "Lateral Intestinal Anastomosis."

While it is theoretically better practice to anastomose so that the intestinal peristalsis shall be continuous, clinically it seems to make little difference. The possibility of intussusception of the proximal blind end should be avoided by having it short and suturing the stump to the wall of the opposite intestines.

After resection for chronic obstruction of the small intestine end-to-end union is the operation of choice. I prefer the two-row method of suturing. The Connell single row of sutures and the Murphy button, in such cases, give equally good results. If the button is used it must be made certain that there is no narrowing of the lumen of the intestine below which would prevent its passing out; and the line of anastomosis should be protected by four interrupted mattrass sutures of linen or silk, so applied that they will pass the button.

The immediate functional results after end-to-end union are better than after the lateral. Cannon has shown experimentally that there is delay of food at the opening in lateral anastomosis and that this is not true of end-to-end unions. In time, however, the lateral union adapts itself to circumstances so that the fecal current is direct and a slight elbow in the intestine is all that marks the site of the juncture.

RESECTION OF THE ILEOCECAL COIL, ASCENDING COLON AND HEPATIC FLEXURE.

The ileocecal region is a favorable situation for operative interference. The blood vessels are terminal, so that it is not necessary to exercise the same amount of care as in the ligation of the mesenteric vessels higher up, where the main blood supply is continuous to the intestine below. The contents of the ileum are in a fluid state, so that the mechanical conditions are much simpler than in the large intestine, where solid fecal masses endanger the integrity of the suture line.

The lymphatic arrangement of the large intestine is favorable for resection. The lymph nodes are sparse and do not easily take offense, as would be expected from the nature of the colonic function.

Butlin's statistics show that more than half of the patients with carcinoma of the colon die from obstruction of the bowels before glandular metastasis has taken place. As a rule ileocecal resection should include the ascending colon, and resection of the ascending colon should include the cecum. The certainty of union in ileocolostomy is so great as contrasted with anastomosis in the colon, that the extensive removal of the intestine is more than compensated.

The ileocolic anastomosis should be lateral, and made between the lower ileum and the transverse colon near the hepatic flexure underneath the omentum. The intestine should be crushed and tied with catgut, after which the stump should be inverted with purse-string sutures; the two-row method of suturing with the aid of holding clamps gives the best results. We have, however, a number of times used the Murphy button, passing each half in through the open cut ends of the bowel and drawing the barrel out through a button hole, making the juncture without the usual purse-string suture as recommended by Robert Weir. The button union,

however, should be protected by four or five mattrass sutures of linen or silk.

In irreducible ileocecal or other intussusceptions the procedure of Mikulicz and Jessett, which is a modification of the Mounsell method, may be employed. After reducing as much of the intussusception as possible, an incision is made through the containing wall of the investing colon and the entire gangrenous mass lifted out, amputated and sutured from the mucous side. After the stump is returned, a few sutures of linen or silk protect the serous surface. The working incision in the colon is separately closed.

RESECTION OF THE TRANSVERSE COLON.

In resecting part of the transverse colon it should not be forgotten that in four cases out of five the middle colic artery is the sole blood supply, and unless these vessels are involved they should be preserved, else the whole transverse colon will become devitalized. End-to-end or lateral anastomosis may be performed, as the parts are amply surrounded by peritoneum and invested in the folds of the omentum, so that the certainty of union is very great. The contents of the transverse colon are semi-fluid, which is a most favorable circumstance. The suture method, however, should be adopted, preferably the two-row with the holding clamps. The Murphy button should be avoided, as there may be fecal masses of sufficient size to obstruct the button lumen.

RESECTION OF THE SPLENIC FLEXURE, DESCENDING COLON AND SIGMOID.

The colonic fecal container begins at the splenic flexure of the colon and extends to the upper border of the rectum. The splenic flexure and the upper part of the descending colon under normal conditions are empty, acting rather as a connecting link or passage-way to the sigmoid, which is the true fecal reservoir. That portion of the sigmoid which is closely attached to the iliac fossa, the English call the iliac colon, and the part lying between this and the rectum, the pelvic colon, which is more accurately descriptive than the term sigmoid.

Resection for obstruction between the splenic flexure and the rectum should usually be made in two stages on account of the solid character of the feces. The cause of the obstruction is most frequently new growths or extensive inflammatory disease, such as diverticulitis. Immediate end-to-end or lateral union may be advisable when there is no obstruction, especially in that part completely invested with peritoneum, but if there is obstruction the complete primary operation is very fatal. It is far better to follow the method of Mikulicz and Paul, which consists in drawing the affected part out of the abdomen and after separating its mesentery and suturing the two limbs together, attach it to the abdominal incision, with the diseased part projecting beyond the skin. After waiting as long as the condition of the patient will permit for adhesions to protect the wound, the obstruction is relieved by a small opening in the distended loop. In from two to four days the entire projecting area is cut away, leaving the two ends of the colon flush with the skin, side by side like a double barrelled gun. At the end of two weeks a pair of clamps is introduced, one blade in each opening, and made to grasp the opposed walls of the intestine, where they are held by the sutures for a distance of not less than three and a half inches. The clamps are gradually tightened until they cut their way through, which takes from four to six days. This re-establishes the communication. The fistula gradually contracts, and will either close itself, or can readily be closed by secondary plastic operation.

AFTER-TREATMENT OF INTESTINAL RESECTION.

The care of patients following intestinal resection is important. First, the patient should have the head and chest raised to the semi-sitting posture for several days after the operation, so that the sepsis may be gravitated away from the sensitive diaphragm, to the pelvis, where it will be more safely absorbed. Second, in obstruction of the small intestine especially, there is necessity of rectal infusions of salines, four or six quarts in the adult during the first twenty-four hours, as recommended by Murphy, to aid elimination and relieve the dehydration so frequently present. Third, the stomach must be carefully and repeatedly emptied and irrigated with hot water, if there be any tendency to prolonged nausea or vomiting.

[THIS SYMPOSIUM ON ILEUS IS TO BE CONTINUED. THE DISCUSSION WILL FOLLOW THE LAST PAPER.]

PUBLIC PROVISION FOR INCIPIENT CASES OF TUBERCULOSIS, SANATORIA AND DISPENSARIES.*

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The prevalence of tuberculosis; its fatal tendency when sufficiently advanced to manifest its presence by symptoms, physical signs and tests, when not treated; the encouragement afforded to sufferers when properly treated; the disease being the most amenable to treatment of any of the chronic diseases, especially in the incipient stage; the well-known source of infection and its means of communication; together with the means of prevention; and, lastly, the practical results which have been achieved as shown by the decreased mortality where efforts have been made to treat and control the spread of the disease, are sufficient reasons for assuming without argument that the public should make provision for the accomplishment of these ends.

The treatment must be carried out in sanatoria, dispensaries and the home, or by combinations of these methods, according to the condition of the patient.

By public provision, in this title, I understand provision by the nation, state, county or municipality, as may come within the province of each, in contradistinction to provision by private charities.

For convenience of consideration of this subject, people may be divided into three classes: The poor, who live on their earnings from day to day and on the charities of the public or their friends, when, through lack of work or misfortune, they cease to earn wages for a short time and must be cared for as soon as overtaken by illness.

The second class, those who are more provident than the first, and who lay in store enough to tide them and those dependent on them over a greater or less period of time that their earning capacity is suspended; and who are able to support themselves during temporary interruptions of work or of ordinary short illnesses, or if enforced idleness for a considerable time, would be able

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

to contribute something to their support, but not to maintain themselves wholly, and secure the attention which they need throughout a long-continued illness, such as an attack of tuberculosis even when discovered in the early stages usually proves to be, and should have a certain degree of assistance.

The third class are those who are financially able to maintain themselves indefinitely during the incurrence of such expense as is needed to secure the best care and treatment during the course of this disease, and do not need, and many do not desire, aid, but opportunity.

Each of these classes is entitled to consideration. It is one of the underlying principles of civilization that members of the human family are dependent on, and should aid each other; this is the more necessary the more urgent the need, and among the greatest urgencies for aid is in time of illness.

Again, the public should not discriminate between the deserving and the undeserving. It owes opportunity only to the former, it should give no less to the latter. It acts on this principle when it gives protection and opportunity to the convicted criminal undergoing punishment. Not to do as much for the deserving places, to that extent, a premium on crime. Private charities may discriminate between the deserving and the undeserving.

Again, those who receive public aid are under obligation to the public and should lend themselves for scientific research and the dissemination of scientific knowledge, where this can be done without in any sense jeopardizing their chances of recovery.

With the large amount of material which should be available in every "public" sanatorium or dispensary, a comparatively small outlay would furnish opportunities for scientific work; and, indeed, some of this work might be made to reduce the operating expense, as by a system of internships or classes.

The well-regulated sanatorium is the agency through which the treatment of tuberculosis can be carried out in its highest degree of efficiency.

The first class of individuals mentioned, the poor, can only secure this treatment if the public provide it, and in making provision for the incipient cases, it is taking steps to prevent these cases from becoming advanced and restoring them to usefulness.

To place them in a well-conducted sanatorium is to completely change their environment, their habits and their mode of life, and acts as a stimulus favorable to recovery.

These people should receive the best care and treatment suited to their condition, and that which gives them the best opportunity for recovery and makes them least likely to be dissatisfied with their lot when they return to take up their part in the world.

While it is desirable to encourage the desire for higher living, it is dangerous to make persons so much dissatisfied with their walk in life as to embitter them. This I believe to be especially true with young women, as the temptations are greater which beset their paths than are the temptations of young men, and their opportunity to lift themselves entirely out of their former environment and station in life is less.

It is possible to teach them cleanliness, care of secretion and discharges, furnish nourishing and wholesome diet, and make their surroundings comfortable, and not depart so greatly from the environment to which they will return that they lose heart in trying to emulate the life they have been shown was right. What we should do is to place these people under such environment that they can carry the mode of life back to their homes, live it themselves and teach others how to live, and in that way each one may influence many more.

The second class of people to whom I referred do not need entire support, but are able to do something for themselves, yet are unable to maintain themselves and those dependent on them during the several months which it is necessary for them to have treatment to effect a cure from the incipient stage of tuberculosis in a sanatorium.

Their manner of life has been different from the former, and neither class is wholly congenial to the other; and congeniality of surroundings and associates has much to do with recovery in a disease which is so largely dependent on nutrition as is tuberculosis, and where persons must for the length of time necessary be more or less intimately associated in an institution for the cure of incipient cases of this disease.

In a sanatorium, the life partakes much of the character of the family. It is difficult for patients to entirely live apart from others, nor is it desirable that they should. Congenial companionship is a valuable aid.

These patients are able to pay a portion of the expense, and should be granted that privilege. For this reason I believe that separate sanatoria should be maintained by the public; one for those who are unable to pay, and are wholly charitable; the other for those who are able to pay a part, or semi-charitable institutions, and that those who are able to pay a part should, if unwilling, be compelled to do so.

Much excellent work has been accomplished in sanatoria which take both charitable and pay patients; but I believe that greater good could be accomplished by these same institutions if this source of friction could be removed. As to those whose financial ability permits them to pay in full, I do not believe it to be the duty of the state to provide. What they are entitled to, and what most of them desire, is opportunity.

This can be supplied by the private sanatoria. Many of these are semi-charitable institutions, being endowed or receiving donations sufficient to cover a considerable portion of the expense of maintenance, while probably all number among their patients those who are unable to pay. These institutions are the proper ones to discriminate in favor of those of limited means who are especially deserving. By receiving proper compensation from those who are able to pay for care, these institutions are able to extend their philanthropic work to a greater number whom they may consider deserving and are able to furnish the comforts to which these people have been accustomed, contributing to their contentment and better opportunity for recovery.

Public sanatoria should, as far as is possible, in common with all other institutions of public charities and corrections, be removed from politics and political influence. Salaries should be commensurate with the responsibilities assumed and service required and sufficient to attract the most able physicians.

Comparatively few of the great mass of tubercular patients discover that they are afflicted with this disease in the incipient stage; and of those who do, many, on account of civil condition, social relation or other responsibilities, can not or will not accept the advantage of the sanatorium, whether it be charitable, semi-charitable, or one at which they are permitted to pay for such treatment as they desire. These must be treated outside of the sanatorium, which means they must be treated at their homes or at the dispensaries or by a

combination of both. The well-to-do will seldom go to a dispensary, so that the public dispensary will be confined to the treatment of the poor and those who are of at least limited means.

As a means of treatment, and as an educational factor, while the dispensary is not equal to the sanatorium, yet it is probable that for the money expended, a greater number of people can be reached through the different forms of dispensaries than through any other channel; and the homes of the tubercular patients can be more thoroughly and completely supervised than in any other manner.

The methods of conducting dispensaries are numerous, and each one is adapted to different classes of patients. In many incipient cases patients applying for dispensary treatment feel that they must continue to work, or that they must maintain their homes in part.

The provision of food for patients who are unable to supply themselves with sufficient amount of the proper kind, aids very materially; and every one who has had experience in the dispensary treatment of incipient cases of tuberculosis, or even in the moderately advanced cases, has been gratified to see material gains made after having instructed the patient how to live, how to expend his earnings for food, and, if necessary, supplement his efforts by furnishing what they are unable to provide, and have seen the beneficial influence exerted over an entire family, tenement house or district, by dispensary patients who had received instruction, and especially if their homes have been visited at intervals by the visiting nurse.

The out-of-door camps have been productive of great good; and, perhaps, their influence is more noticeable in women, because mothers who do not feel that they can leave their families entirely will go for a few hours a day to an out-of-door camp; however, very few patients in the incipient stage of the disease can do so.

Probably the method introduced by Dr. Parker, of Boston, of the formation of tubercular classes, will become one of the most popular means of caring for the tuberculous poor by different societies. The good which can be accomplished in this way is certainly great, and is applicable not only to the cities, but also to the smaller towns and rural districts which have heretofore been neglected. Many persons who would not go to a public dispensary or a public camp will become members of a class, and in that way come under the direction and supervision of physician and nurse.

Is it profitable for the public to provide sanatoria and dispensaries?

Tuberculosis claims most of its victims during the most valuable age to the state, during the reproductive period and the period of productive labor.

Biggs estimates the value of a human life to the state at this period at $1,500, and I think this is not excessive. Based on this, let us consider the monetary value to the state of a sanatorium for incipient cases.

Basing this estimate on the work of the Massachusetts State Sanitarium, at Rutland, the first state sanitarium to be established, we find about 50 per cent. of all patients received are discharged as apparently cured and 40 per cent. more improved. This percentage, no doubt, would be greater were the cases treated confined to the incipient stage.

If for each 100 patients treated, for an average length of time of six months, fifty are discharged cured and forty improved so that they are restored to their earning capacity for an average of one year only, we have a basis on which to compute the value to the state of a sanitarium if they are saved, or the loss to the state if the disease runs an uninterrupted course.

Furthermore, if the disease continues to fatal termination there is a period of time of loss of earning power, which may be conservatively stated at ten months, and another period during which they must have care and treatment from others. If we place the loss of wages for ten months at $1.50 per day and care for six months $1.50 per day additional, we have items of expense which should be added to the above. We will have:

Fifty cases restored, valued at $1,500 each	$ 75,000.00
Wages, 50 people, 10 mos., 260 days at $1.50	19,500.00
Care of 50 people, 6 mos., 180 days, at $1.50	13,500.00
Forty persons restored to earning capacity for one year—313 days—at $1.50	23,475.00
Total amount saved to the state each 6 mos. for each 100 persons treated	$131,475.00
An average weekly saving for each patient treated 6 months	50.50
If we estimate the average weekly cost of caring for patients at	12.50
We have a gain per week for each patient	$38.00
Or for each 100 patients continuously under treatment for an average of 6 months we will have 200 per year, $200 \times 52 \times \$38.00$	$395,200.00
Saved to the state for each year per 100 constantly under treatment.	

If it is supposed that half of these might have obtained these results without public aid, may we not balance this with the reasonable probability that each patient who dies of tuberculosis infects one other person?

I believe these estimates to be conservative and that the actual monetary value to the state greater than here estimated, not to mention the suffering saved.

If our social conditions are responsible for the existence of tuberculosis, society owes assistance to the sufferers from this cause, who are unable to care for themselves, and society must care for them in order to protect itself and check the spread of the disease.

Educational influence of organized effort is being manifest by the greater frequency with which patients seek relief early, appreciating the fact that on early diagnosis and treatment depends largely the success of their efforts. Much more is to be accomplished along this line, offering every encouragement to individuals for early recognition of the disease and acknowledgment of its existence rather than concealment.

Every encouragement should be offered to patients to remain at the sanitarium or to report to the dispensary until recovery is complete, and to this end the good which may be accomplished by sanitarium treatment or direction received at the dispensaries should be made apparent to the patient. The advantages of observation and direction regarding diet, rest, exercise and habits of life are of paramount importance.

With the accumulation of evidence of the advantages to be derived from the judicious use of the culture products in the treatment of this disease, I desire to urge on those giving special attention to this work, careful consideration of their use. I believe them to be a valuable aid, if judiciously used. Do not undertake their use in a routine manner, as the results will prove disappointing. Study carefully their mode of action, their possibilities, the technic of administration and use them scientifically. The result will, I believe, be gratifying. They will also add to the patients' interest and assist in holding them under observation.

CLIMATE AND OUTDOOR LIFE IN THE TREATMENT OF TUBERCULOSIS.*

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Health is maintained by a vitalizing triad: air, light and food, which constitute the necessary elements of nutrition. So life depends on the earth and its atmosphere, and human nature, therefore, is inseparably linked with, and under the influence of, the numerous atmospheric conditions that surround us.

Air, as we believe, is a mixture of about 21 parts of oxygen and 79 of nitrogen, more or less saturated with water vapors. The nature and amount of these vapors depend on various circumstances, such as proximity to the sea, bodies of fresh water, the existence of winds, altitude, etc.

Air contains a certain quantity of ozone, "a sort of electricized or condensed oxygen," fatal to miasmatic and decomposition developments. Ozone is scarce in the air of cities, but renewed at intervals everywhere, in a measure, by electric phenomena, as all of us have noted in the peculiar freshness—almost pungency—of the air after lightning has streaked the clouds in a storm. Air contains also a small amount of argon which seems to be inert. It contains, perhaps always, a measure of deleterious substances, among which the most objectionable are carbonic acid gas, oxid of carbon, and the myriads of micro-organisms floating about in an invisible cloud of dust. You have all noted this remarkable phenomenon when revealed by a stream of light through a room. In certain localities the air is vitiated, furthermore, by special earth and vegetable dusts which are particularly injurious to the respiratory organs, such as, for instance, the alkali, the fine sands raised by the winds, the pollen of certain plants. It may also be seriously injurious by admixtures from smoke stacks, smelters, foundries, etc.

So, in our efforts to utilize climate as a preventive or curative measure, we should seek to begin with localities where the conditions afford air of the highest purity in every particular. We should discriminate between localities which are the freest from deleterious substances and those which are more or less polluted. How are we to reach a conclusion on the purity of the air in a given locality? Alas! it is very difficult, with the meagerness of the reliable sources of information one can refer to. It is part of the problems of climatology—a vast subject of the sanitary and medical sciences so sadly neglected by our medical schools that few medical practitioners to-day have more than a rudimentary conception of the basis of climatotherapy.

In thus speaking of air at the outset, in discussing climate, I have anticipated a point of general climatology to emphasize the pronounced importance of this factor, and to suggest that, wherever there is pure air, the climate is generally desirable for most cases, irrespective of other circumstances. We will now turn to climate as a whole.

Climate is the sum total of atmospheric conditions. It varies in Nature everywhere according to numerous causes, such as sea currents, light, heat, winds, rains, fogs, mists, snows, frosts, altitude, latitude, distance from bodies of water (lakes, rivers and seas), the nature of the soil (as porosity, compactness, color, rockiness), the conformations of the earth's surfaces (as slopes, hills, mountains, crags, ravines, basins, plateaus), vegetation (as forests and grasses or their absence, as in deserts and on the plains), artificial achievements (as the building of large cities and irrigating canals), the density of population. Naturally, several of these influences are related and more or less inseparable. Indeed, many modify each other and it would be very tedious and difficult to study them separately. Nor is this necessary to understand climate—enough for practical purposes in climatotherapy. Necessarily, then, there exist a great number of different climatic conditions around the earth, each to be classed as a special climate, some of which are bound to be more or less inimical to health, and some of which tend to brace vital activity and to stimulate it to good health.

In the use of climate in the treatment of tuberculosis (and for other maladies, for that matter), we are concerned chiefly with those having a special influence in maintaining nutrition, for this is the basis of resistance against the tubercle bacillus and its toxins; in fact, it is the basis of restoration to health in any malady. Indeed, tuberculosis, like other infective diseases, can not be arrested without that sort of cellular nutrition which is capable of producing and maintaining immunity, and only the climates that can unusually assist such nutrition are worthy of especial consideration as a therapeutic measure. And it should be understood in this connection that there is no perfect climate. A good climate is relatively so, but never such as to include every feature of a theoretically perfect climate for therapeutic purposes. Many physicians who send patients away in search of curative climates expect more, and their patients expect more than is available anywhere, and much disappointment and many sad failures follow. Generally, the idea in mind in sending a patient away is outdoor life in the surroundings most suitable for his condition. This involves, then, not only a knowledge of climates, but their respective utility in and adaptability to different pathologic conditions of various diseases, and even of the same disease, as well as their influence on different temperaments and physical natures. For instance, the tubercular do not all respond alike to the same climatic influences of a given locality. The very anemic, the very dyspeptic, the cavity cases, the mixed infections, the incipient infections, the acute developments, the laryngeal lesions, etc., may exhibit very different results in a given climate—some of them bad which might have been good in a climate especially suitable.

So we need to classify tubercular patients, as well as climates, with regard to climatotherapy. As a basis we should divide them into two general classes, to be again subdivided on pathologic details. In one class I would place the advanced consumptives of all types, including the profound tubercular anemias, the softening processes, the cavity cases, the mixed infections with grave depression, and in general those physically depressed to a grave degree under any form of tuberculosis, save perhaps tuberculosis of the brain. As a rule, these patients seem to do better at higher and dryer altitudes than the lower ones, or where moisture is great, although for comfort, among the incurables, a mild or very warm climate is often grateful to the sufferers.

In the second class I would place the dyspeptic, pretubercular so called (a false designation), the incipient tubercular developments and possibly all stages of tuberculosis prior to softening processes and also the early mixed infection phenomena. These, under proper at-

* Read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

tention, may do well almost anywhere in pure air, irrespective of altitude, but do much better at medium altitudes, if other climatic conditions are suitable, and may do well in high altitudes under similar circumstances. It is largely a question of individualism as to where it is best to send them, the most reasonable solution being to send them where, if cure should follow, they can return home and live there in comparative safety.

As I have just suggested, these classes might be subdivided. Several series might be made, based both on pathologic conditions and climatic circumstances. I can not follow this line of thought here, nor can I discuss the local situations of climatology which go to make this spot better than that other nearby, and more or less suitable for this or that condition. Such local climatic influences are of great importance, but they must be considered on the ground, with reference to each case brought there, and no discussion could be made extensive enough, on such an occasion as this, to do more than suggest the need of consideration. Temperature has to be carefullly considered in studying climate. It is held also to be a paramount factor of climate. Certainly it is the most impressive factor on the tubercular. Hot or cold are two effects which they feel quickly, with a great variety of results, and more numerous consequences still on the mind and the physique. But, outside of the direct influence on the system, its effect on climate is what concerns next the student of climatology.

In a given locality heat depends chiefly on the location, distance from the equator (modified more or less by proximity to bodies of water), high mountains, snowfalls, glaciers, moisture in the air, winds from cold regions, cold storms.

The air is heated by the absorption of sun rays by the moisture of the atmosphere. Therefore, the more moisture in it the hotter the weather and the more depressing it may become. An atmosphere absolutely dry would let the sun rays pierce it without imparting any warmth whatever. Sucha dry air, and indeed any atmosphere excessively dry, is not as healthful as one mediumly so, for a certain amount of moisture in the air we breathe is necessary for the tissues and, besides, it contributes to the diffusion of a medium temperature. When one accustomed to moist atmosphere is suddenly placed in a very dry air, there sometimes occurs irritation of the air passages to a more or less aggravating extent. This sort of air is taken advantage of in the treatment of cavity cases of tuberculosis and various suppurative forms of disease, such as tubercular infection of the ear, catarrhal involvements of the nasal passages, etc.

The temperature in the sun and the shade vary, of course, and should be differentiated. The latter depends on the heat given off by the earth's surface, which may be modified anywhere by warm currents of air. Dry air, allowing the heat reflected from the earth to pass through more completely and more readily than moist air, makes the difference between heat in the sun and heat in the shade much greater in high altitudes and mountains than in low and moist altitudes in which the moisture stores more heat. In comparatively dry and clear atmospheres the heat is lost rapidly during night, thus tending to produce a cool night air, which is most comforting and conducive to very restful sleep. Those who live in cities impregnated with moisture know how depressing and really sickening is the hot night air they must stand during the warm months. And, conversely, moist air is also chillier in cold weather than dry air, and the city folks know this well, too. At a temperature of twenty or higher in moist localities one suffers more from cold and contracts respiratory troubles much more readily than at a much colder temperature in a comparatively or very dry climate. Indeed, cold air, in a fairly dry locality, is bracing, stimulating, healthful, and it is the reverse in a moist locality. Hot air, dry, in the shade, is beneficial, in advanced consumption particularly, but is ennervating in the sun. High moist temperature is very depressing and conducive to languidness, and should not be selected for patients with curable tuberculosis. In very anemic patients, however, particularly those in whom comfort is more essential to pass the days of a weary existence than efforts to subdue a disease which seems impossible to arrest, a warm climate is of value. It often seems to soothe and comfort. The effects of atmospheric temperature are influenced by sunshine, winds, local air currents, etc. Those influences which improve the effects of atmosphere operate to make the temperate zones the healthiest.

Sunshine and light are of great value. On the mind and nervous system alone they have a powerful stimulating effect. They chase the "blues" and render the surroundings more cheerful. Besides, light itself has direct hygienic forces, arresting the life of many deleterious micro-organisms and favoring the purification of the air and contributing tone to the system generally.

Humidity in the atmosphere has much to do with the effects on the body of man. As we have noted, very dry air has disadvantages as well as excessively moist air, for humidity is a necessary condition of healthful atmosphere. It is concerning the extremes of humidity and dryness that, in the selection of a climate in which to treat tubercular patients, one should discriminate with a view to adaptability and suitableness, particularly if one intends to secure the effects of night and day outdoor life.

Moisture in the air is termed absolute and relative. Absolute moisture is the amount of aqueous vapor in a given volume of air. Relative humidity is properly stated, in Solis Cohen's Physiologic Therapeutics, as "the quantity of vapor in a certain volume of air, expressed as the percentage of the amount that the same quantity of air, at the same temperature and same pressure, could possibly hold when completely saturated." Temperature and pressure, then, should be taken into account in considering relative humidity and its consequences on climate, such as the formation of fogs, mists and dew, which consist of condensation and precipitation of moisture.

This brings us to the question of moisture in the air sufficient for the production of fogs, etc. It must be acknowledged that the effects of these phenomena on man have been often ill judged and the bad results as often grossly exaggerated. While fogs attest to a certain amount of moisture in the air which in itself might be injurious, the locality in which they appear has definite modifying influences. For instance, a thick fog in a valley, at a low altitude, usually remains low, on the ground, and thickens the air to a point sufficient to depress one and to cause him to become wet, clammy and cold. A similar fog in the mountains occurs in the declivities and dents of the earth, near rivers, etc., and rises up early in the morning, leaving the air fresher, sweeter and purer. Besides, fogs are not without direct benefit in keeping the air free from floating impurities. Like the rains and snowfalls, they gather dusts and floating germs. In the mountains the fogs are comparatively few and usually in the form of a thin mist. Some

of them appear like a haze and hover around the crests of the highest mountains more or less persistently. Such is perhaps the peculiar blue haze of the Blue Ridge Mountains of the Appalachian range which is, nevertheless, noted for its salubriousness.

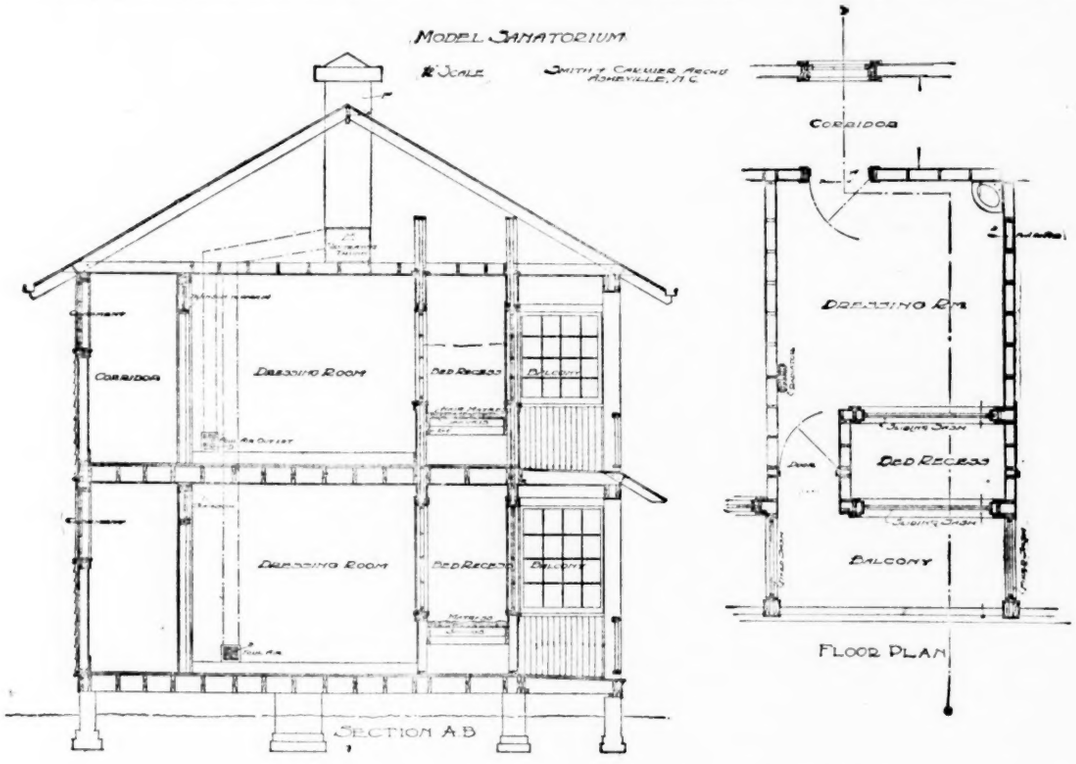
Rainfalls are not all bad for tubercular patients. As I have just stated, they gather the germ-laden dusts of the atmosphere and bring them down to the ground. If the rainfalls are great, and in lowlands, the ground becomes more or less soaked and the atmosphere becomes too moist; then there results bad effects on the system. The same amount of rain in the mountains has quite different consequences. It brings down the impurities, too, but, instead of saturating the earth, it rushes down the mountains and hillsides to the streams as fast as it falls, carrying air débris more or less completely with it, and leaving the soil comparatively free from water to form atmospheric vapors.

Snowfalls have a similar effect, only they weigh down the dusts that they gather, and hold them until the temperature rises to the melting point, when the water formed runs down to the streams or soaks the ground, according to locality.

Frosts are salubrious in arresting and suspending decomposition and fermentation phenomena on the surface of the earth, but ground deeply saturated with water, in regions very cold, freezes very deep and, during the thaws which follow, the air becomes moist and thick to a degree damaging in respiratory troubles. Hence, it is beneficial, in such cases, for those living in cold climates to move, early in the spring, to localities where frosts are slight. I believe it preferable not to go to extremes, as, for instance, to climates so warm that frost never occurs.

Rainfalls, snowfalls and frosts, then, may be really beneficial by clearing the atmosphere, particularly in the mountainous regions and may become damaging, chiefly by their excess and persistency and saturation of the soil and vaporization afterward.

Altitude, which we will now consider, is, of course, of great importance in climate, but it is not, as so often considered, the most useful factor in the treatment of tuberculosis. As one climbs the mountains he meets temperatures colder and colder until the level of perpetual snow is reached. With some modifications, due, in a measure at least, to certain local influences, the temperature becomes colder by about one degree F. each 300 feet or so. Altitude, then, means cool and cold atmospheres, which are conditions that stimulate all the physiologic activities of man. Besides this sort of temperature, high altitudes have a lower barometric pressure than low altitudes, and thus the air is not so dense. It is also dryer, clearer and purer in every way at a certain stratum above the crust of the earth. However, there are high altitudes where the atmosphere is not favorable for the treatment of certain sorts of respiratory troubles. For instance, in high altitudes, where alkali dusts or sands cover the ground and windstorms occur frequently, the atmosphere becomes so full of irritating dusts that it can not be considered the most favorable for the cure of respiratory troubles. Nor is a high altitude always applicable to cases suffering from heart affections or to people with nervous temperaments.



Winds are of two kinds: the general winds, dependent on the general circulation of air over the globe, termed trade winds, and local winds dependent on local conditions of topography, heat, cold, etc., and may perhaps be exemplified by the summer monsoons that blow from the Gulf of Mexico over the plains of Texas and the lower Mississippi Valley. Some of these winds, in some localities, impair the atmosphere very seriously. Strong winds, cold blast winds, chilly winds, hot moist and cold moist winds, winds with dust storms, are all to be avoided. Information on this point should be obtained before selecting a preventive or curative climate for tuberculosis, remembering, however, that, in a given locality, one can perhaps select such a spot as to be entirely sheltered from at least the prevailing bad winds,

if not from all of them. In the mountains this is usually a comparatively easy matter, because one can take advantage of elevations and coves as protection. On level grounds one must usually resort to artificial means of protection. Now, given such a climate as we may find favorable for the treatment of a certain type of tuberculosis, there remains to settle this question of selecting a properly protected spot, as also the question of exposure, which is of the greatest importance. I suppose that it can not be denied that in most parts of North America a southwest exposure for the living quarters, bedrooms and outdoor sleeping shelter is, as a rule, the very best, for it affords patients the greatest amount and longest period of sunshine essential as a cheering and curative agent.

As to outdoor life in any climate, intelligent management is necessary. It has been prescribed too often for the tubercular without regard to their condition, possible reactions and other ill results. It is not enough to advise a patient to live out of doors, night and day. They must be shown how, where and when to do this safely. They must be advised as to the causes of accidents, as excessive walking, steep mountain climbing, chilling of the body surfaces, the winds, the dust storms, getting up nights while sleeping out, etc. The latter question deserves special consideration. The greatest drawback in sleeping out is the danger of colds and congestions in getting up from a warm bed in the cold air, perhaps in a draft. Various means have been suggested and are in vogue to procure safety, but none are very satisfactory so far. A new device, intended to afford one a safe and easy way to sleep in or out of doors at will, consists of a pair of sashes, hung on wheels, one each side of the bed. Each sash is perfectly balanced and moves up and down with ease in metal grooves that can never tighten. If one desires to sleep indoors he pulls down the outside sash and lifts the inside. If he desires to sleep out he pulls down the inside and pushes up the outside one. When sleeping out and wanting to rise he pulls down the outside sash, puts up the inside and steps into a warm bedroom (or dressing room, rather). So he does not catch cold. This room and the sleeping compartment are ventilated by direct currents of air through and through from back to front without striking the bed with drafts. The foul air is extracted by flues in the walls, ending on the roof with a specially adapted cap which draws in any wind. A corridor, running back of the room, and a porch, with side glass doors to protect from side winds, are features of the bed protecting structure in front. The roof slopes enough to keep the direct sun rays from the bed and to shade one who may lie in the daytime, but not to shut out light. A steamer chair may be placed on the front porch for the convenience of the occupant. The building as a whole is on the pavilion or section plan. One may add a string of them in a row and heat all by one system. (It is the plan which I have adopted, with a southwest exposure, for the Asheville-Biltmore Sanitarium, now building between the city of Asheville and the town of Biltmore, in North Carolina.) After long search and tests I feel confident that it will afford the best means to date for sleeping outdoors safely in any weather. The device is adaptable to any house by suitable alteration or new construction.

In conclusion, permit me to draw your attention to our very imperfect knowledge of climatology and our blundering as a consequence. For instance, we do not fully realize the nature of our body relationship to the atmosphere, as evidenced by reactions on our tissues, particularly the nerves and the parts involved in certain pathologic phenomena. How and why is it that certain atmospheric conditions cause the appearance of more or less severe aching and nerve pains in arthritic, rheumatic, neuralgic, mialgic and pleuritic affections? We theorize on the subject, but we are far from having scientific data as an explanation. It is probable that other less tangible influences occur on diseased people, perhaps the tubercular, which we do not as yet appreciate. Certain it is that the mere change of climate, irrespective of locality, is often productive of good results and that certain localities which, by the usual factors of climate, would seem very ordinary in the treatment of tuberculosis, occasion apparently persistent cures. It then behooves the profession to undertake a systematic study of climate. The medical schools should take up the matter.

DISCUSSION

ON PAPERS OF DRS. JACOBI,* FARRAND, OTIS, BROWNING AND PAQUIN.

DR. J. H. STOLPER, Krebs, Okla., said that the thing that surprised him is that the men who spoke about the function of the state in relation to the study, prevention and treatment of tuberculosis in incipient and advanced stages seem to have one fixed idea about tuberculosis as it exists in the large cities. Dr. Stolper, for the last five or six years, has been entrusted by various railways in the United States with the formation of a sanitary department, to deal with sanitary conditions on railways. It seems to him that no one has taken into consideration the influence of passenger trains, either for good or bad, in the spread of tuberculosis, as well as other diseases. Thousands of tuberculous patients travel in search of health, and state boards of health, with the exception of Texas, have not paid the slightest attention to the prevention of the spread of tuberculous diseases on trains. In his annual reports to general managers of railroads, Dr. Stolper has recommended that the common drinking cup, which often becomes rusty, be abolished on trains. The answer of the executive officials has been that they fear public criticism in doing away with the drinking cup. Railroad managers have assured Dr. Stolper that they would be perfectly willing to give railway sanitation a fair and reasonable place in their departments provided the public would cooperate therein. During his administration of the temporary sanitary department of the Santa Fe, Dr. Stolper found that the greatest difficulty in establishing any decent sanitary rules against the spread of tuberculosis and other infectious diseases was the absolute lack of cooperation on the part of the public, so far as physicians are concerned. Dr. Stolper knows no reason why physicians, who take into consideration school hygiene, sewerage, drainage, rain, mountains, the hills, valleys and other things, have disregarded railway sanitation. In regard to coal smoke, he said that in Oklahoma everything possible is being done to abate that nuisance. The city of St. Louis has a smoke inspector; other cities have the same inspection, and it is simply a question of time when this nuisance can be abated. In the northwest and southwest to-day more factories, more industry and more life are needed. Factories need steam for their existence, and so long as steam can be obtained from coal, there will be smoke. The only way to abate the smoke nuisance is, first, to find a way to obviate the smoke. So long as physicians remain theorists and advocate measures impossible of adoption, so long will their efforts be of no avail.

DR. MARTIN FRIEDRICH, Cleveland, Ohio, added a word of warning concerning Dr. Otis' paper; not that he thinks the doctor wrong theoretically, but practically we ask for money for sanatoria for consumptives who can no longer be cured, he is afraid that we unwittingly commit an act of cruelty. On account of their physical feebleness he thinks consumptives are more sensitive than any other set of people and they are

*The papers of Drs. Jacobi, Farrand and Otis were published last week.

attached to their families and homes with stronger ties than the rest of the people. The only redeeming feature of tuberculosis is the eternal hope with which it buoys up the patient for final recovery. To take them away from their homes rudely and roughly and put them into a hospital where they know that they can not be cured; to have them realize when they leave their families that their good-by is the last; seeing in their imagination written over the door of the hospital Dante's terrible words: "Abandon hope, all ye who enter here," is to cause them great torment.

Separate wards should be provided for the incipient and more advanced cases. In Cleveland there are two separate hospitals, one in the city on the City Hospital grounds for the more advanced cases, the other about ten miles from the center of the city on a 2,000-acre farm, entirely in the country. The ones in the city are told that they are not fit yet for open-air treatment. They are told: "You could not stand the strong air currents and the wind and rain of the country. We simply keep you here until you get a little stronger and then we will send you out into the country," and frequently when they do get better and give hope for a possible recovery they are sent to the country. A great deal of policy is needed in this matter. If money is asked for the "advanced cases" the people will soon find out what this means. When in Cleveland the hospital was constructed for the care of smallpox it was called the detention hospital. The people called it the pest house. The same thing will happen with the hospital for advanced tuberculosis.

DR. J. EDWARD STUBBERT, New York City, said that he is greatly interested in Dr. Browning's remarks regarding the classification of patients in the sanatorium, although he would take issue with him as to the number of classes. The local sanatorium at Liberty started with the care of all three classes; in contradistinction, Dr. Goodnough had the one class at Saranac. He never encountered the difficulties which were encountered at Liberty—the utter impossibility of mixing the three classes socially, which finally resulted in a considerable loss, from a financial standpoint, to the owners of the institution. Sanatorium work is as yet young; and Dr. Stubbert believes that experience has so far shown that there should be sanatoriums simply for two classes: namely, those patients who are absolutely incapable of caring for themselves; second, those who can care for themselves partially only. He thinks that sanatoriums as we understand the word for the rich people should be done away with entirely. For instance, at Liberty to-day there is a tent where patients are admitted and charged according to what they can pay. A patient, a woman, came to his office in New York recently and said that she could pay $3 a week. He said, "All right; pay the $3 a week and the sanatorium will pay the balance." Another patient was sent up and paid $5, which is the limit placed on the patients who go there. The introduction of politics into a well-organized sanatorium brought the good work of that sanatorium to a standstill. Politics should be kept out of every sanatorium in every state and in every city. Take for example a sanatorium that is partially a state sanatorium and partially a private institution. Politics has been kept out of it, and to-day it has a history that it can be proud of. While Dr. Stubbert believes thoroughly in climatic treatment, the tuberculous patients who come under our care must be considered; 93 per cent., approximately, of all tuberculous patients in our cities must remain at home. Therefore, physicians have no right to apply climatology or any rules to 93 per cent. that can only be put in practical use for 7 per cent. We have no perfect climate and must adapt all climates to all patients. Dr. Otis for the last few years has demonstrated that very thoroughly in Boston. All physicians know what a climate that is to produce tuberculosis; and yet Dr. Otis has established a work in Boston that applies to the 93 per cent. and not to the 7 per cent. It is not the climate, nor the altitude, nor the sea level, but it is outdoor life and pure air which must be supplied to patients. The house that Dr. Paquin has shown can be applied in New York City, in Boston, in Philadelphia, in Colorado or in Texas. It is outdoor life that is needed for patients, with common-sense diet and rest.

DR. LISTON H. MONTGOMERY, Chicago, said that the railroad roller towels constitute an equally, if not a greater, menace than the drinking utensils; no one knows what kind of infection may be lodged on them. He does not agree with the speaker who said that the medical profession has done absolutely nothing toward bringing about sanitary measures on railroads. The railroad officials will and do consult physicians and in many instances accept their suggestions in such matters so as to keep the coaches in proper condition, particularly when the train leaves the initial or starting point. It is the passengers, usually, who create much filth in the coaches that make them so unsatisfactory or they appear to be such while en route. Dr. Montgomery is sometimes called a railroad surgeon; and the managers have talked to him on these subjects and sometimes, indeed, almost always, his suggestions are accepted.

DR. GORDON WILSON, Baltimore, Md., brought up a point mentioned in Dr. Otis' paper in regard to municipal hospitals. In Baltimore two errors were made. The first was the establishment of the municipal hospital for consumptives in the same grounds with the almshouse. As a result thereof it is almost impossible to get the better class of the poorer patients to go there, as they fear the stigma of being "in the poorhouse." The second error was in putting this hospital under the charge of the Supervisors of City Charities instead of the Board of Health. (As a result of this those having charge of the admission of the patients enquire most carefully as to the financial condition of the patient and his family, and wholly ignore the question of the patient being a danger to the community through the advanced character of the disease, and his weakened condition preventing his taking the care that is necessary.) Thus patients "far advanced" have been refused admission simply because they had a relative able to house and feed them, though unable to give them that care that would render them harmless to others. In the matter of the education of the physician, it is pretty generally granted among physicians who are connected with sanatoriums limited to incipient cases of tuberculosis that the general practitioner does not recognize these cases in their incipiency and the reason of his failure is that he is not properly instructed during his student days because these patients are not admitted to the wards of a general hospital for the purpose of study. If these patients were admitted to the wards of a general hospital connected with a medical school, and if it were demonstrated to the student from the suggestive history, the slight afternoon rise of temperature and the tuberculin reaction, in spite of the few or no physical signs, that the patient has tuberculosis, the physician thus instructed would recognize the disease before the physical signs of advanced tuberculosis had made their appearance. For these reasons Dr. Wilson urges the admission of incipient cases of tuberculosis of the lungs to the wards of a general hospital connected with a medical school.

DR. GRANDISON W. DRAKE, Hollins, Va., said that for the last ten years he has been resident physician for a female college. The female colleges and institutes of our country need to be looked after in one way, especially: the kissing habit of the young ladies is a very dangerous and prolific cause of the propagation of tuberculosis. The young ladies in a short time after the beginning of the schools select chums and the devotion between those two—between that pair—is equal, if it does not exceed, the devotion of a young man and his sweetheart. They practice the goodnight kiss—or kisses, it should be—because the kiss is repeated over and over again, with an intensity unequaled by the kisses of lovers under the moonlight; and in the morning they repeat the morning kiss; and all through the day they kiss. This would be a very prolific source of the propagation of tuberculosis. Dr. Drake has talked on the subject and has tried every way as an individual to prevent the kissing habit. If this body of American physicians would speak out in a resolution on that subject, it might assist; it would go far toward preventing this dangerous habit. During the prevalence of grip in the school he saw a notice in one of the newspapers that the health officer of Atlantic City had said that kissing is a prolific source of the

propagation of this disease. He clipped the item from the newspaper and put it on the school bulletin board and called frequent attention to it. To make it attractive, he gave notice to a few young men who are professors in the school that they dare not have that disease during the session, that it only prevailed among the young ladies, and that if they had the disease he should report them to the management and try them before the faculty.

DR. CLIFFORD H. IRION, New Orleans, said that he believes that in the action of the public there is a more promising field of operation than in the treatment of tuberculous individuals in sanatoria. A very small percentage of tuberculous patients ever reach a sanatorium; and that percentage will not be greatly increased in the next few years. But the public can be educated and taught how to prevent the spread of tuberculosis in their own homes and in their own families. Every known method for the spread of tuberculosis should be thoroughly well taught to the people themselves in order that an intelligent knowledge of this disease which is devastating this country may be created, at the same time a demand on the part of the public for such legislation as would be necessary to aid the physicians in their campaign for the treatment of the tuberculous. One of the problems that physicians have to solve is the prevention of transmission of disease by common carriers—those methods of transporting the human race from point to point. Railroad sanitation is very important. For instance, in many of the street cars now the antispitting ordinance is rigidly enforced; it is in New Orleans, where there is a heavy penalty. The street cars of New Orleans are clean and nice—so different from what they used to be, that it strikes the attention of those who live there and can recollect a few years back. On the contrary, a man who gets on a day coach on a railway train must roll up his pants to walk from one side of the car to the other and keep out of the tobacco juice or other filth on the floor; and there seems to be no disposition on the part of the public to demand a remedy of that condition. So far as concerns kissing, he said, there are too many other important matters, and so long as the little god with bow and quiver goes around through the world unchallenged, the campaign against kissing will meet with very little encouragement from the public. The difficulty lies not so much in incipient tuberculosis as in the lack of courage on the part of the physician to tell the patient that he or she has incipient tuberculosis. It is neglect, largely, rather than ignorance on the part of the physician. But if the physician will rise to his duty, diagnose his cases and make them public; if the boards of health throughout the Union would make it obligatory, or, if they are powerless, get such legislation enacted as will give them the power, to report tuberculosis as a contagious disease, just as measles, smallpox and diphtheria are reported by law; and then if the people are taught that this is a contagious disease, that it is a curable disease, that it is a preventable disease, then they will themselves demand that an intelligent crusade be conducted, and they will call on the medical profession to institute that crusade.

DR. EDWARD O. OTIS, Boston, Mass., said that in a large city, like Boston, for example, of 600,000 inhabitants, there is always a large number of patients, in advanced, hopeless stages of consumption in tenement houses and elsewhere who can not be taken care of at home. It may be, for example, the head of the family who is thus incapacitated for earning his daily living and that of his family; something has to be done with him; he can not be properly taken care of at home, and he is in danger there; and for such the best place is the tuberculosis hospital. There are enough of such advanced cases to fill up any and all tuberculosis hospitals; and, furthermore, the tuberculosis hospital is not a "home" or a poorhouse; it should be, on the contrary—and it is proposed to make it, in building the tuberculosis hospital in Boston—a place where proper opportunities will be allowed for suitable patients to take the open-air cure. For example, on the grounds, which consist of sixty-five acres of land in the suburbs of Boston five minutes from the center of the city, there is, besides a summer day camp, which it is proposed to keep up throughout the year, plenty of opportunity for those who will and are suitable patients to take the open-air cure; and by no means is it necessary to say: "Abandon hope, all ye who enter here." There are many distressing conditions, of course—none more so than when the physician of a sanatorium is obliged to say to the patients who do not gain under the open-air treatment: "This is no fit place for you. You are not getting well here; you are getting worse; you will have to go elsewhere." No more distressing case than when the examining physician for the sanatorium finds that the patient has come to him too late, in an advanced stage, and he has to tell him—distressing as it is—that he is unsuitable for the sanatorium cure. This fact must be faced, and it seems to Dr. Otis that a tuberculosis hospital will be hailed with delight by those poor families in which there are no proper means for taking care of advanced cases of tuberculosis. Dr. Otis emphasized, again, what Dr. Farrand said with regard to the education of the public. This has been done for several years in Boston. There is the Boston Association for the Relief of Tuberculosis and education has been one of the principal works—systematically educating the public in the very best way. The greatest use has been made of the stereopticon and lantern slides and there have been audiences under any and all conditions. There is in league with the association, for example, the Catholic priests, and they have been instrumental in obtaining large audiences; lectures have been given before clubs of all kinds, before labor unions, before workingmen's clubs of all kinds, and wherever an audience could be obtained, particularly before the school children. Appeals were made to the school committee and permission was obtained to give lectures before the school children—the younger and the older—and before the normal schools; and, furthermore, an exhibition has been sent from one part of the city of Boston to another; so that in the last three years the people have been thoroughly educated in the common, simple principles of tuberculosis and its prevention; and to complete, one might say, this system of education, the trustees of our tuberculosis hospital asked the city of Boston to appropriate money (which they did) for putting in every family in our city a pamphlet giving a simple description of tuberculosis and its prevention. So Dr. Otis believes that now people of all classes have an intelligent understanding of the simple facts of tuberculosis. It seems to him this educational propaganda has got to be carried on strenuously throughout the country; because the legislature must be appealed to for money for these various methods of prevention and treatment, namely, tuberculosis hospitals, sanatoria, etc. A great deal of money is needed for these objects; and in order to obtain that money, in order to create the enthusiasm among legislators, the people must first be educated; then they will back physicians in the requests and insist with the lawgivers that money should be appropriated for these various objects of prevention and cure.

DR. J. C. FOLTZ, Philadelphia, said he heartily agrees with Dr. Otis as to the great danger to the community of the hopeless cases in their last stages, when they become careless and helpless and most need nursing for their own sake as well as the protection of the community. The great difficulty, however, is to reach such cases without filling the hospital with patients that are chronic fibroids, hanging on indefinitely and filling the beds required by others. The boards of few hospitals appreciate the distinction, and at Chestnut Hill they have never got below 60 per cent. of bed patients, that formerly were largely fibroid cases, but are now more carefully selected. The aim of the City Mission of the Episcopal Church that has the hospital in charge is so to improve the patients with incipient phthisis that they may return to their homes after having learned the proper method of living. They thus become a leaven in the community, and instruct their friends and relatives, reaching a much larger number and returning some to usefulness and self-support. In calling it a home the odium of a hopeless hospital is avoided, and in limiting the number of bed patients expenses are cut down and more wards can be kept open. Dr. Foltz said that over half a million is invested in this institution. It is the oldest hospital for the cure of consumption in this country.

There is great need, he said, of architects who will specialize

in building hospitals, and of directors who will select such specialists. The hospital at Chestnut Hill was built about 1886 on a plan that was then becoming obsolete, but most luxurious, with an open fireplace in each separate room, in which no fire has ever burned; with double sash to keep out the wintry blasts that are now welcomed; an elaborate ventilating system of flues that never draw even if doors and windows are closed; it was, in a word, an architect's dream and a doctor's nightmare. The plan has been changed as much as possible by building broad porches to both floors, cutting down the windows, so that the beds can, if necessary for bathing, be run in for a few minutes, but at other times the patient remains in the unobstructed open air, day and night, summer and winter, the whole year round. Four winters, some of them very cold, have proved that porch treatment is practicable in our climate. Sanatoria should not be for the rich; they can develop the second-story porch idea where they wish, and the removal from friends and herding with others is not an advantage. The poor need only be considered as ambulant and bed cases, and the sooner most ambulants go to bed, the sooner they will get up.

DR. G. FARRAR PATTON, New Orleans, said he wished to emphasize the necessity, not only of interesting the public, but of securing the cooperation of the public. The medical profession, he said, would conduct a campaign on too dignified a plane, if it did it alone. In Louisiana they are at present just at the beginning of a very active antituberculous campaign, which originated in the Woman's Club of New Orleans. They have the cooperation of the King's Daughters, the Women's Clubs, the Mothers' Clubs of the Public Schools; and this campaign is going along with great vigor and success. The Mothers' Clubs hold meetings in the public schools, and physicians, who are appointed in response to requests, lecture before those clubs in the most informal manner.

It is purposed to have attractive motto cards exhibited in the public schools, and the teachers are to call the attention of the children to them. All the popular organizations—benevolent societies, labor unions and fraternities of the city—are willing and anxious to have physicians talk to them; a number of them have already applied. With reference to financial support, the membership fee has been placed at the nominal figure of $1 a year, but a number of organizations, like the Masons, Odd Fellows and lodges (that is, circles) of King's Daughters, are coming forward with small but steady contributions toward the working expenses of the league, and the success of this campaign will depend mainly on the cooperation of the women of the country.

DR. EDWARD O. OTIS, Boston, said that our divisions of tuberculosis are often all, more or less, arbitrary. It is difficult to say when incipient cases cease and when the moderately advanced case begins; so that the hospital for consumptives—for what we call advanced cases of consumptives—will receive certain patients who in some respects belong to both classes; therefore, it is the intention in Boston, in building the municipal consumptive hospital (as he believes it should be with all such hospitals) to make provision for the open-air treatment; so that those patients who are beyond the early stage and unsuitable for entrance in a sanatorium, can be given the outdoor treatment; and if they improve under it, they can be transferred to the sanatorium. In Massachusetts, where the state sanatorium has been in existence seven years, the educative influence of the cured discharged patients from that institution has been of incalculable value: they have diffused throughout the state of Massachusetts a desire for fresh air and proper living, good food, and good hygiene. Where the sanatorium does not exist, "tuberculosis classes," so-called, have been instituted. That is, small numbers of tuberculous individuals—eight to ten, or fifteen—are taken under care by one or more physicians, they are visited by the nurse in their homes, their life is regulated so far as possible, they are brought together every week and are given instruction as to temperature, methods of the out-of-door life, food, etc. It is certainly an advantage to those patients who can not enter a sanatorium, and the patients become educational centers to others, in their homes and the community.

DR. C. C. BROWNING, Monrovia, Cal., said he wished, first, to make just a brief reference to Dr. Farrand's paper in regard to the teaching; and he was much interested in Dr. Otis' details as to the method of teaching—especially the teaching in the school. He believes that there is the place for us to begin to work the great reformation. It is hard to change the people of to-day; it is easy to lay the foundation for the changing of the people of to-morrow; and teaching can be done in the school understandingly, beginning with the very early grades. It can be taken up in connection with the courses in nature study, showing the relation of the lower organisms to the general underlying principles of hygiene. He thanked Dr. Otis for emphasizing or presenting in detail the methods of the tuberculosis class as carried on in Boston. He believes that the division which he makes of three classes is a proper one; and those who have taken issue with him have done so because he did not make himself quite clear. The subject assigned to him was, "The Public Provision for the Care of Tubercular Patients in Sanatoria and Dispensaries," and he stated that "public provision" he interpreted to be provision by the state, municipality, or county, etc., as the case might be. The very poor must receive that care from the state; the second class should receive aid from the state, sufficient to enable them to receive the benefit. If the sanatorium is the place where the treatment of tuberculosis can be carried out in the highest degree of proficiency, should the well-to-do be debarred? They are not looking for care from the state; they don't want it; they desire opportunity. This can be furnished by private sanatoria. Further, if private sanatoria are established, or endowed institutions (and there are many of them doing good work in the country), they, then, are the proper ones to care for those patients of limited means who are especially worthy. They make discrimination on account of past life such as the state can not. It has become quite popular to condemn the habit of kissing, because of the danger of tuberculous infection. In emphasizing those things of lesser importance, and giving them prominence in the eyes of the community, the idea is encouraged that the casual meeting of the tuberculous patient is a menace. That is not true; it is the continued contact with the patient and with the surroundings—the house—that furnishes the danger.

As to the railroads, they have done some good work and are taking precautions. In regard to the climatic conditions, Dr. Browning heartily agreed with Dr. Paquin. There is no climate which should be universally recommended; it is as unscientific for a man to recommend any one particular climate to every tubercular patient as it is to recommend one kind of bath or any other one particular method of treatment. Climate and climatic condition should be studied carefully and recommendations made accordingly.

DR. PAUL PAQUIN, Asheville, N. C., said that he wished to emphasize the idea that he had in mind in the outdoor sleeping device. It can be applied anywhere; the idea is not only for curative cases, but for the purpose of prevention and the improvement and comfort of incurables. In general practice everywhere in the United States it is possible to have the right kind of device to sleep out; and the great danger of people sleeping outdoors is that they catch cold, so to speak, and suffer too often from congestions, which sometimes kill. Very many of them are afraid. A good many of them perspire and when they get out of their bed at night, as many of them must, then they get cold and grave, if not fatal, relapses occur. An old house can be rearranged to put the idea in practice; a new house can surely always be so constructed. It is a matter of mechanical technic. The arrangement is suitable for every night outdoors, in hospitals. With respect to climate, the prevalent notion seems to be that all that is necessary to do with tuberculous patients is to send them to a new climate and let them sleep out of doors. This, he said, is a serious mistake. A great deal of damage is often done by such advice. To begin with, a great many patients are sent away who can not possibly live; and it is cruelty to them to send them away to die in a strange country. These patients should really remain at home and the physician there should so advise. Spitting ordinances are of great value. A spitting ordinance has

been in force in Asheville, N. C., for a great many years. There is a penalty attached to spitting on the sidewalk in public places, in the stores, etc., and the ordinance is enforced. There is a penalty of $1 for each and every offense and little promiscuous spitting is seen. The law and habit is thoroughly understood and carried out.

With regard to the teaching in the schools, Dr. Paquin happens to be a school director in Asheville, where they have a system of medical examination, and hygiene is taught with the view of preventing infectious diseases among school children. Teachers are properly instructed; and the teachers instruct the pupil in the right direction—not as to tuberculosis alone, but with reference to all infections of every kind and character.

MUCOUS COLITIS.

ARTHUR D. DUNN, M.D.
OMAHA.

Mucous colitis is a subject of more than passing interest to the practitioner, to the internist and to the surgeon. It is so involved with constipation, neurasthenia and various surgical conditions that any illumination that can be thrown on the chaos in which the subject is now floundering will be worth the effort. To the general practitioner this disease is of importance, for the prophylaxis lies largely in his hands in the rational treatment of chronic constipation in its early stages and in the proper handling of incipient neurotics. To the internist the disease is of interest because of the diagnostic problems it may present and the numerous therapeutic difficulties to be surmounted before he can accomplish a restoration of health. The analysis of its etiologic and irritative relationship is of prime importance from a curative standpoint. It is not uncommonly closely allied with surgical conditions which aggravate and render the disease more persistent. From its tendency to simulate certain other acute and chronic abdominal conditions, laparotomies may be performed from which no results are obtained. It occasionally coexists with surgical affections, such as chronic appendicitis, tubo-ovarian disease, displacements, etc., forming a vicious circle, and if overlooked renders inefficacious surgical procedures. With its congeners, neurasthenia and "starvation," the disease does not receive the attention that it should in the decision for or against operation. This is, indeed, a territory in which the surgeon and internist should work hand in hand if end results are the desiderata.

In reviewing the literature of this subject I find a striking lack of uniformity as to nomenclature, etiology and symptomatology. A discussion of the nomenclature would of itself make a paper of considerable dimensions, but it would have little save philologic value.

Among the etiologic factors arraigned are constipation, neurasthenia, hysteria, pelvic derangements, appendicitis, adhesions, trauma, menstruation, arthritic diathesis (numerous French and English observers[1]) and neoplasms. One author[2] even incriminates the liver. The disease is clearly not an etiologic entity. As to two factors, however, there is a consensus of opinion, viz., constipation and a neurosis, one or both of which are always present, usually both. It is a disease of civilization, dependent on an intense life, on inherited nervous instability, on the too great digestibility of our foodstuffs, and occasionally on certain anatomic conditions.

1. de Langenhagen: Lancet, 1904, 1; also de Gendre: Jour. de Med. et de Chir. pratiques, 1905, lxxvi.
2. Cohnheim: Krankenheiten der Verdauungskanals, Berl., 1905.

Constipation, taken in its broad sense, with its sequelæ, is the *sine qua non*.

Constipation.—For clinical purposes and to show its relationship with mucous colitis, constipation may be schematically divided into the following stages, which thus given are distinct and clear enough, but which merge insensibly into each other. This classification (Cohnheim[2]) is also of value, as it shows clearly the relationship of constipation to this disease.

1. *Atonic.*—There is a tendency to sluggish movements of the bowels, the stools are of large caliber, and the patient resorts occasionally to laxatives, aperients and enemas. The muscles of the colon are relaxed. Except in pronounced neuropathics, the disease begins in this stage.

2. *Catarrhal.*—The condition is aggravated by the abuse of catharties, flatulence is present with occasional colicky pains. Frequently we find scybala covered with mucus by the glands of Lieberkühn, caused by stagnation

3. *Spastic Constipation.*—This occurs as soon as the abuse of purgatives and the catarrh have so irritated the colon that more or less hypertonicity of the musculature results. In neuropathic individuals and in hysterics, this form appears earlier.

4. *Membranous Enteritis.*—The so-called myxoneurosis of Ewald. We have here a more aggravated state of the condition with excessive catarrhal secretion of mucus by the glands of Lieberkühn, caused by stagnation of scybala in the large gut. The constipation is obstinate, the mucus is dried out by the absorption of the fluids and is expelled, enveloping the feces or in restiform masses. In this stage we often find mucous casts of the bowel.

5. *Colica Mucosa.*—This is merely an acute exacerbation of the above described membranous enteritis. There are accessions of severe colicky abdominal pain which may simulate other acute intra-abdominal conditions so as to produce a severe and striking disease picture. It is followed by a discharge of feces with more or less mucus. After the expulsion of the mucous masses, the patient is free from pain for a variable interval.

6. *Mucous Diarrhea.*—Diarrhea alternates with constipation. These cases are comparatively rare, occurring largely in neuropathics or in individuals whose constipation has been grossly maltreated. The secondary catarrh is here so much in the foreground that its origin from a chronic constipation is only discovered by careful investigation.

Much confusion has arisen from the establishment of the so-called colica mucosa as a type to which we have tried to make all cases conform. The clinical entity of the disease has thus become ill defined, and its relationship to chronic constipation is obscured. This relationship is of the greatest importance to the diagnostic understanding and therapy of the disease. Innumerable variations and transitions may be seen, which form clinical pictures extending from simple catarrhal colitis with constipation, on the one hand, to mucous diarrhea alternating with constipation, on the other. The vast majority of the cases belong to the category of severe constipation and hold in themselves only the potentiality of ever fitting the frame of colica mucosa. It is this that has given us our trouble in diagnosis, and it is these incipient and aberrant types that form the majority of our patients. The well-sketched type of colica mucosa is one of the end stages. It is comparatively uncommon and easy of diagnosis. It is only by considering the disease as a form of constipation that we can gain an

adequate conception of its pathogenesis and a rational understanding of its therapy. The constipation is nearly always of the spastic variety, at least spasticity and atony are alternatingly present, depending on the presence of an exacerbation or quiescence in the disease.

Neurasthenia.—Neurasthenia is almost always present in the open or *en masque*. It may precede, arise synchronously, or follow in the wake of the constipation. It dominates the scene or plays the rôle of a supernumerary. We might say the reaction of the organism to the disease varies directly as the square of the neurotic soil. Nervous excitation often brings on an explosion. The menstrual period may be the signal for an upheaval. A tea, a literary effort, a wayward husband or child, or some skeleton in the closet, may be potent factors in igniting, maintaining or aggravating the condition. The incidence of mucous colitis among society women is remarkable. It is often a question of much perplexity to determine whether the neurasthenia or the the mucous colitis is the primary condition, so involved are they at times.

Malnutrition.—The undernutrition of these sufferers is often marked. They are afraid to eat because eating has been associated with discomfort. They have dieted themselves until we often find them subsisting on 700 to 1,500 calories, when they should have at least 2,500 to 3,000. Coffee and toast, with an occasional egg or a little meat t. i. d., is their variety. Seldom do they take any of the cellulose-rich articles.

Visceroptosis.—Mucous colitis is often responsible for the symptoms of visceroptosis, or *vice versa*. Visceroptotics are generally nervous, poorly nourished and overworked individuals. A heavy colon dragging on its moorings is predisposed to constipation. The more the irritation from this displacement and the greater the circulatory and innervation disturbances in the colon, the more likelihood is there of the constipation becoming spastic, and the step from spastic constipation to mucous colitis is a short one. Kinks in visceroptotics occasionally aggravate the constipation; so will also a movable kidney pressing on the colon.

Pelvic Displacements.—Pelvic displacements are often an aggravating and irritating cause which tends to accentuate or prolong the condition.[3] A boggy, retroverted, retroflexed or retroposed uterus can form a mechanical obstruction in the rectum; likewise tumors and inflammatory masses. It is easy to see how a tender, inflamed or displaced uterus, inflamed adnexa or a parametritis coming in contact with the rectum can act as an inhibition to peristalsis in the sigmoid and descending colon. Many French authors make much of this condition, and some are so rabid as to say that the disease always has a pelvic *point de depart*. Thus we see the dogma *le bassin, c'est la femme,* masquerading in new clothes. In selected cases the simultaneous treatment of the mucous colitis and pelvic disorders alone cures the condition. These cases explain surgical failures which, with proper therapy for the constipation, would have been successes. I remember one case with an enlarged, retroposed uterus and a prolapsed ovary which could be felt in the cul-de-sac on a level with the cervix. A typical colica mucosa had here followed the use of Garfield tea extending over many years. When seen, the patient had been suffering from repeated paroxysms of pain for several weeks, which had caused herself and friends to despair of her life. She reacted nicely to medical treatment, but, on return to her household duties, there was some return of the constipation with a slight discomfort. Operation was advised and refused, but I can not help but believe that the combined treatment with remedying of the surgical condition would have produced lasting results. It is probable that surgery alone would have failed absolutely. In another case of which I have notes there had been two laparotomies, one for a supposed stenosis of the descending colon and one later for an ulcer in the sigmoid. On the latter occasion a small stercorous ulcer had been excised from the sigmoid and an ovary removed without benefit. The patient had suffered from the most intense abdominal crises for twelve years. The whole colon was spastic and the descending colon and sigmoid flexures could be palpated during the attacks as tender cords of lead-pencil size. The crises were almost daily, and the large gut was always more or less spastic. The patient had become morphiniste. A boggy, retroverted uterus plugged the pelvic outlet like a ball valve. The tip of the finger could be inserted between fundus and sacrum only with much difficulty and pain. The spasticity of the gut and the cramps disappeared completely after the operation. No special diet had been instituted. Death occurred fifteen days later from an accident. While the time was too short to assume any positive result, the immediate cessation of the symptoms is suggestive, inasmuch as no transient or immediate relief had followed the other operative procedures.

Appendicitis.—It is probable that mucous colitis coexists occasionally with chronic appendicitis, forming a vicious circle, as it were, in the production of abdominal distress and neurasthenia. Mucous colitis has been compared to gastric hypersecretion and hyperchlorhydria and *de facto* the comparison is not farfetched.[4] Mucous colitis is not improperly considered by some as a pathologic hypersecretion of Lieberkühn's glands. The rôle of appendicitis in aggravating a hyperchlorhydria or hypersecretion is well known, and has been sufficiently demonstrated. *A priori* the same should be true of the colon, and cases are reported which go far to prove it. That appendicitis is a result of mucous colitis, or that the latter plays any part in the production of the former, is difficult to say. Dieulafoy has found it in about 2 per cent. of the cases analyzed which comes within the limit of the normal incidence of appendicitis. This incidence, however, should always make us look for appendicitis in mucous colitis so that we may not overlook the former in the latter disease. In one case, of which I have notes, the patient had suffered ten years from numerous attacks of spastic constipation with occasional mucous discharges. Two of the recent attacks had differed from the usual in having chills, vomiting, temperature and persistent tenderness in the ileocecal region. Much weight was laid on the statement that walking, motion of thigh and jolting in a wagon during the attack had caused her local distress. She also stated that the "mouth of the womb" had been tender during the month in which she suffered from her last attack. A diagnosis of appendicitis in mucous colitis was made on the history and without findings. Operation showed a rather large appendix lying on the psoas and over the brim of the pelvis. There was a stricture about 1 cm. from its mouth through which a greenish-yellow, fetid pus drained. No adhesions except a slight band from base of appendix to cecum. No difference between these two and the other attacks had been noted by the practitioner, but the patient appreciated the difference when

3. Boas (I.): Deutsch. med. Wochschr., 1900, No. 33.

4. Bouveret and Dévic: Quoted by Vinay (see footnote 5).

her attention had been called thereto. A typical attack of colica mucosa occurred two months after discharge from the hospital.

A careful analysis of a large number of cases of appendicitis with reference to previous colon disturbances might establish a definite etiologic relationship. There is certainly a considerable number of appendicitis patients that do not gain complete and permanent relief from operation; these cases may belong to the mucous colitis class and this disease may have been the predisposing cause of the appendicitis.

Presumably chronic cholecystitis may act in the same manner as appendicitis.

Chronic adhesive peritonitis, with its manifold and bizarre manifestations and partial stenoses—constricting and dragging bands—adhesions to the subdiaphragmatic organs, causing rhythmic traction on the colon, may act as an exciting cause and render medical treatment unsatisfactory. We can not get far away from the reflex and nervous element in this disease, and its pathogenesis is closely wrapped up with the innervation of the colon and the reflex arcs affecting it.[5] Many of the cases are explicable only as a reflex sensory and motor neurosis. We may safely say that the pathogenesis of the disease will not be satisfactorily elucidated until the nerve supply of the colon with its relations has been worked out.

Trauma.—Cases referable to trauma have been reported, but they do not bear analysis, although it is easy to conceive that resultant mechanical intra-abdominal conditions and nervous shock may bring on the disease when the soil is fruitful.

Cases have been reported in connection with carcinoma of the intestinal tract, following the injection of tannic acid, and Einhorn reports twelve cases in which achylia gastrica was present. The disease commonly exists with hyperchlorhydria. The defective elaboration and division of food in the stomach and its resultant mechanical irritation may be factors.

Arthritic Diathesis.—The French and English make much of the gouty diathesis and see a hereditary and diathetic connection between gout, chronic nephritis, nephrolithiasis, cholelithiasis and intestinal lithiasis. Dieulafoy and his school report intestinal sand present in the majority of cases. This is only another way of stating the individual differences in cellular physiology and its susceptibility to noxious influence based on heredity. Others have not noted the frequent presence of intestinal lithiasis.

Pathology.—The pathology of the disease may be considered as (1) pathology of the colon, (2) pathology of the exciting causes. The latter has been hurriedly discussed under etiology.

Colon.—There are no pathognomonic findings. In most of the autopsies there have been neither macroscopic nor microscopic changes (Osler, Edwards, Francke and others). Inconsiderable interstitial changes only were present in Weigert and Rothmann's cases. Hemmeter has reported two cases in which interstitial changes were present. One case brought on by injection of tannin showed desquamation of the epithelium and slight round cell infiltration in the submucosa. Nothnagel explains this in another case in which there were the same findings, as abrasions of the mucosa due to the scybala present. Commonly shreds or pieces of mucus have been found tightly adherent to the bowel—they extend into the crypts and are deficient in water. In my autopsy there was a tendency to adhesion formation (*Schwartenbildung*). There were numerous thread-like adhesions along the colon, extending from the striæ to the saeculi. The omentum and small intestine were adherent at the site of the old and recent laparotomy scars. No adherent mucus, ulcers, erosions or other gross changes in the mucosa of the large intestine. Microscopic examination of sections from the descending colon showed no changes.

Symptomatology and Diagnosis.—The disease is protean in its manifestations. First a careful and painstaking history is essential to the diagnosis, as it is of much more importance than the physical findings. There should be a careful inquiry into the digestive and dietetic life of the patient. Constipation will usually be found extending over many years, with hard stools, sometimes alternatingly large and small, with "sheep's dung" and with colicky pains preceding or accompanying defecation, with a resort to clysters, and *abusus purgantium*, such as the taking of large quantities of salts, cascara, proprietary cathartics and liver medicines. The patient may complain of sensations of fulness in the abdomen, dulness of intellect, dyspepsia, neuralgia and cephalalgia, attacks of heat and cold, weakness, and later the whole train of neurotic symptoms. The onset of the disease is gradual. If it has progressed to the later stages we have attacks of dull, heavy or severe paroxysmal pain, localized in some definite region of the abdomen. If carefully inquired into, its radiation will be found to follow the course of the colon in part or whole. It is common for the pain to end in the hypogastric, splenic or hepatic areas. It may radiate to the back along the costal region; it may even radiate toward the shoulder. Its character is twisting, tearing, griping or aching—it is often paroxysmal. Backache is not uncommon. Febrile manifestations and leucocytosis are usually absent, nausea is occasionally present, vomiting rarely so. Tenderness is usually found in the sigmoid, cecal, hepatic or splenic flexures, one or several. These points of tenderness are of great importance in making a diagnosis, and it is they which lead most commonly to error. Tender, contracted, spastic segments of the colon are generally palpable. In the cecal region it may simulate the tumor sensation given by appendicitis. Mucus may be passed in the stools, although it is not indispensable to a diagnosis. Patients are so seldom observant of their stools that it is only after having a patient under observation or by calling his attention to the importance of observing the dejecta that the masses of mucus will be found. It may have the appearance of spaghetti or vermicelli. There is always spastic constipation when the mucus is passed in this form—it represents the rolling and twisting due to the tonic contraction of a spastic bowel. Jelly or sago-like masses often occur. Some of these unfolded in water may give us a complete cast of the bowel. Membranous flakes or thin slimy casts enveloping the scybala are more common.

Neurasthenia is always present in advanced cases. A discussion of this manifestation of the disease would be as extensive as a treatise on neurasthenia itself.

Differential Diagnosis.—When approached with a spirit free from prejudice, and when a careful anamnesis is taken, and an examination is made, the diagnosis is comparatively easy.

(1) Appendicitis: Mucous colitis is easily diagnosed from acute appendicitis if sufficient care is taken. One should hesitate to diagnose the latter without pain, def-

5. Vinay (Ch.): Lyon Med., 1904, 649, et seq.

inite and sudden in onset, becoming localized at McBurney's point. Pain at McBurney's point without temperature or leucocytosis is scarcely acute appendicitis. Again nausea and vomiting are practically always present. In mucous colitis we can get a history of a long standing constipation and digestive disturbances, of pains present heretofore and in other parts of the abdomen. The problem is more difficult in chronic appendicitis. Here a history is often obtained of a previous acute attack with a localization of more or less trouble at the same point ever after, or a careful anamnesis tells us that the trouble has always been in the region of the appendix; observations carried on over a considerable period of time will always bring us back to the same point of localized tenderness, while in mucous colitis the points of tenderness are inclined to shift from one part of the abdomen to another, although they may be present for days in the same locality. A spastic, tender cecum and ascending colon are palpable at times. In chronic appendicitis the appendix can often be felt as an enlarged and tender cord. If adhesions are present pain often occurs on forcible contraction of the psoas.

(2) Renal Colic and Dietl's Crisis: The urine examination and a history in the former, and a physical examination in the latter, will usually settle the diagnosis.

(3) Cholecystitis and Gallstones: There should be no trouble in differentiating it from acute gall bladder disease, but I am convinced the mistake is occasionally made. Attacks of pain in the right hypochondriac region without chills or temperature, without radiation of pain to the shoulder or chest, without a tender point to the right of the eleventh or twelfth dorsal spine, and without nausea and vomiting, are not gallstone colic. Unless one finds at least a majority of the above signs and symptoms one should be chary in diagnosing acute cholelithiasis. (Jaundice is of value in only 14 per cent. of the cases.)

Chronic Cholelithiasis.—Here careful history-taking as to previous acute attacks, character of pain, constipation, Murphy's sign, with repeated examinations of the patient, and with some attention paid to the colon, will usually keep us out of trouble. The disease must also occasionally be differentiated from most of the other conditions causing acute or chronic abdominal pain, but these are legion and too numerous to even mention here. The incrimination of pelvic conditions for the symptoms of mucous colitis is a daily occurrence.

Treatment.—To be successful the treatment must be founded on an accurate diagnostic. If an exciting anatomic cause exists it should receive proper operative attention. In many cases the neurasthenia must be our point of attack. A Weir Mitchell treatment may be necessary. Psychotherapy is often of the greatest importance in individual cases. In other cases the malnutrition must be the point of attack with a roborant and appetizing dietary. A change of climate, a vacation, freedom from household or domestic cares, laying aside the duties of society, or the mere leading of a natural life, will often accomplish remarkable improvement. Visceroptotics usually demand fattening, and an increase of intra-abdominal ballast alone brings about the desired result. In this condition a Rose bandage or a straight front supporting corset may accomplish much. The constipation must always receive attention, and here one must emphasize that *qui bene purgat, male curat.* Various diets have been advanced, and there is still some controversy as to whether the patient should be put on a bland diet (Westphalen) or one rich in cellulose (von Noorden). In cases where the spasticity is marked the diet should *a priori* be at first of a bland character, switching as rapidly as possible to a diet rich in cellulose. Where the spasticity is slight, and the constipation tends toward the atonic, a diet rich in cellulose is in order. In the spastic cases opium and belladonna will often bring about desired results. One procedure, however, is generally applicable, that is nocturnal injections of one-half pint to one quart of olive or cotton-seed oil after Kussmaul to be retained until morning. Hot fomentations in the painful stages are agreeable and tend to allay spasm. In combating the constipation we may be compelled to resort to our entire therapeutic armamentarium, that is massage, electricity, habit, mineral waters, etc. In severe cases a period in bed should initiate the treatment. Time and trouble is often wasted in a temporizing, ambulatory therapy. The treatment of each case is a problem in itself as varied as is that of neurasthenia, and often solved only after much study. Results can be obtained, however, which, if not as spectacular as in some other fields of medicine, are nevertheless fully as gratifying and permanent.

THE TREATMENT OF GONORRHEAL INFECTIONS BY A SPECIFIC ANTISERUM.*

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In previous communications[1] we described briefly an antigonococcic serum which had been found efficacious in the treatment of some cases of gonorrheal arthritis. The results were so promising that it seemed advisable to give the serum a more thorough test in these cases and also on patients suffering with other forms of gonorrheal infection. The wider experience thus gained has confirmed our earlier conclusions and seems to justify us in the opinion that this serum exercises a specific curative influence on a high percentage of cases of certain forms of infection by the gonococcus. So far as we have been able to determine in a review of the literature, this method of treatment had not been employed previous to our preliminary communication.

PREPARATION OF THE SERUM.

At the beginning of these experiments it was considered possible that an antigonococcic serum, to be effective, should exercise some antitoxic influence. Accordingly, as was stated, ascitic broth cultures, from six to fifteen days old, were exclusively used in the inoculation of the animals. A satisfactory serum may be produced in this way, but not as potent a one as by a method which will be described below. The use of ascitic broth cultures was abandoned principally for the following reasons: In the first place protective experiments with guinea-pigs indicated that the immune antigonococcic serum did not exercise the slightest antitoxic activity; and, secondly, the repeated injection of the free gonotoxin in the culture media had a disastrous effect on the rabbits which were used in the production of the serum. Although they suffered little from the first five or six inoculations, soon after they reached a condition of hyper-sensitiveness to the toxin and finally succumbed to a dose that would never have proved fatal to a normal animal. This

*From the Department of Experimental Pathology, Loomis Laboratory, Cornell University Medical College.

1. THE JOURNAL A. M. A., Jan. 27, 1906, 261 and 263.

seems to indicate, as Wassermann and others have pointed out, that the toxin in the culture media is not produced in diffusible form by the living gonococcus cells, but is an endotoxin derived from the dead and disintegrated gonococci.

At this time it was noted that some rabbits, which were being immunized to twenty-four-hour ascitic agar cultures, withstood the inoculations very well and raised a serum, which in high dilutions agglutinated the micro-organisms. Accordingly, a similar method of procedure was followed in producing a serum for therapeutic purposes. The cultures were grown for from eighteen to twenty-four hours on large slants of ascitic agar, the culture tubes averaging one inch in diameter. It is essential to obtain a luxuriant growth. This is best accomplished by planting from an eighteen to twenty-four hour stock culture to medium of the following composition: Meat, peptone, 2 per cent. agar is prepared in the usual way and titrated to 1.5 per cent. acid to phenolphthalein. One part of rich sterile ascitic fluid is then added to two parts of this agar. For the first inoculation the growth from one of these tubes, about three square inches of surface, was emulsified in physiologic salt solution and injected living into the peritoneal cavity of a large rabbit. For the next inoculation the emulsion from two tubes was given. This was continued until the animal had received seven or eight inoculations, about fifteen tubes in all, during a period of two months. All the blood was then drawn from the carotid. The rabbits withstood inoculations of this character far better than when ascitic broth cultures were used.

In producing the first sera various rabbits were given different strains of the gonococcus with the idea of determining if certain cultures were better adapted for the purpose than others. It was soon evident that some cultures raised a far better serum than others, and also that a patient might respond favorably to a serum produced by culture A, but not to that from a rabbit immunized to some other strain, as G. On the other hand, the patient from which culture G was isolated was not benefited by injections of serum produced with culture A. The probability suggested by such data, that the gonococcus family is heterogeneous rather than homogeneous, has been substantiated by agglutination experiments, which have shown that various strains of gonococcus may raise agglutinins which are entirely distinct. The details of these experiments have been published elsewhere.[2] Because of this evidence of the existence of several groups in the gonococcus family the serum has recently been made as far as possible polyvalent. Cultures representative of the three principal groups, which have been found in the gonococcus family, are employed in immunizing the animals. This procedure seems to have found justification in a higher percentage of favorable therapeutic results.

As far as our experience has gone the agglutination test has proved to be a valuable index of therapeutic potency. A serum which agglutinated in high dilutions the various strains used in its production, always proved to be markedly curative. Such a serum agglutinated some cultures in dilutions as high as one to twenty thousand or fifty thousand. This test, of course, merely indicates that the animal is highly immunized, for the agglutinins themselves have probably nothing to do with the curative properties of the serum. In fact some sera with a low agglutination power may prove moderately effective. Others, however, are valueless and no feasible laboratory method has yet been found of distinguishing between them.

Rabbits were at first used exclusively in producing the serum. Although a very potent serum may be obtained from these animals, it was found that the serum itself is decidedly toxic for some individuals and may produce a rather alarming reaction. This matter will be discussed presently in greater detail. In order to obviate this serious objection we have experimented with goats and sheep. Similar objectionable properties, although less in degree, were found to be present in goat serum, but from sheep serum they seem to be entirely absent. Accordingly in later work only these animals have been used. They should be full grown, uncastrated males. In immunizing these animals it has been found advantageous to pursue the following plan: The first inoculation may consist of the twenty-four-hour surface growth from eighteen square inches of solid culture medium, emulsified in about 30 c.c. of physiologic saline solution, and heated for one-half hour at 65° C.

We have always employed ascitic agar, made according to the method described. There seems, however, to be no reason, *a priori*, why any solid medium on which the gonococcus grows luxuriantly should not be substituted for ascitic agar, although no experiments have been carried out to determine this point. The inoculations are always given intraperitoneally. After an interval of about a week the second injection should be given consisting of the growth from about thirty square inches, heated as before. On the third inoculation, after the same time interval, about eighteen square inches of unheated culture may be used. On the fourth this is increased to thirty square inches of culture, and on the following inoculations thirty-six to forty-five square inches of unheated culture should be employed. A record should be kept of the weight and general condition of the animal and the amount and the time of the inoculations varied accordingly. It is sometimes necessary to revert to the use of heated cultures. After nine or ten inoculations have been given a little blood should be drawn and the serum tested for agglutinin. If the animal gives evidence of being highly immunized it is bled to death from the carotid and the serum collected. This serum is then filtered and tested for sterility.

The strains of the gonococcus which have been used in producing this serum were selected because, after an extended series of experiments, they gave evidence of being distinct varieties as far as agglutination was concerned. Such a selection of varieties is a long and tedious process, but is essential for the best results. Some strains are much more toxic than others, and obviously the less toxic ones should be used in the first inoculations. If no attempt is to be made to produce a polyvalent serum a strain should be used which raises agglutinins readily and is decidedly toxic. A few experiments will show that there is a great difference in these respects between various cultures of the gonococcus.

TREATMENT.

This serum has been found to be efficacious in the treatment of some of the complications arising from the primary gonorrheal infection. Acute urethritis, vaginitis and conjunctivitis are not markedly benefited by the serum, and for the treatment of these infections it is necessary to resort to other agents. A probable explanation of this peculiarity may lie in the fact that many of the infecting micro-organisms are not reached by the serum circulating in the blood and lymph. However

2. Torrey (J. C.): Jour. Med. Research, 1907, xvi, 2.

this may be, acute urethritis should be allayed by the usual methods in order to obviate the possibility of a subsequent relapse.

The complications which are amenable to serum treatment may be conveniently grouped according to their mode of origin in two classes: 1, Those arising by direct extension of the primary infection into organs like the prostate, epididymis, testicle, bladder and Fallopian tubes, in direct continuity with the primary focus; 2, those due to the entrance of the micro-organism into the circulation, either directly or through the lymphatics. These lesions include arthritis, iritis and the rarer endocarditis, pleuritis and meningitis. Gonorrheal peritonitis may generally be more correctly placed in the first group.

In cases which are pyemic or suppurative in character with abscesses in the joints, tendon sheaths, subcutaneous tissues, periosteum and viscera, there is always the possibility of a mixed infection, and the usual surgical treatment is necessary. After the pus has been freely evacuated the serum may prove useful in freeing the body from any gonococci which have not been eliminated by this treatment.

The pathology and diagnosis of these lesions need not be discussed here as they are matters of text-book knowledge. It is sufficient to call attention to the fact that all of the above complications are more or less amenable to treatment with an antigonococcic serum according to the degree of accessibility of the parts involved to the systemic protectic fluids. The major part of our experimental work has been directed to the treatment of gonorrheal inflammations of the joints. The measure of success which has been attained in this field is indicated in the appended report of cases.

METHOD OF ADMINISTRATION.

The serum has always been given in small doses, viz., 2 c.c. or about 40 minims. No experiments have been carried out with larger amounts, as this quantity of potent serum has been found sufficient to act destructively on the gonococci without danger to the patient. This dose has generally been injected into the loose subcutaneous tissue between the deep fasciæ and the skin in the upper arm, using the other arm on the second injection. Any other convenient point, however, may be used. In the treatment of some of the patients the injections have been given in the neighborhood of the affected joints or deep in buttock. It seems doubtful, however, whether any special advantage attaches to this method. The injections have been repeated, as a rule, every other day. In this regard one must be guided by the general condition of the patient and the degree of the reaction to the serum. In some instances it is necessary to allow an interval of four to six days to elapse between the injections.

With ram serum the only reaction that one may anticipate is a varying amount of local swelling, redness, heat and soreness around the point of injection. This does not occur, by any means, in every individual, and is not caused by any antibody in the serum, but is due to the local toxic action of the serum itself. As the same serum has been found to cause reaction in one individual but not in another, it is partly referable to the idiosyncrasy of the patient.

TOXIC EFFECT OF RABBIT SERUM.

As has been stated, rabbit serum was found to be far more toxic to some individuals than that of the sheep. This marked toxicity, however, manifested itself in only ten of the seventy-five cases treated with rabbit serum. With sixty-five patients there occurred either no local reaction or a very mild erythema. The toxicity may be exhibited by a more intense local reaction, which increases in degree with each injection, or it may take the form of a rather alarming general reaction. The local reaction generally appears in a mild manner after the first injection by moderate pain, redness and swelling. This increases, however, with subsequent treatments and reaches its maximum after three or four have been given. The severe local disturbance occurred in five cases out of seventy-five treated with rabbit serum. As an example of this type the following case may be cited:

CASE 1.—Male, with chronic gonorrheal arthritis and cystitis for five years. Feb. 27, 1906, 2 c.c. rabbit serum injected into the left arm. Moderate pain and swelling for forty-eight hours. March 1, second injection of 2 c.c. rabbit serum into the same arm; pain and swelling as before. March 3, third injection of the same amount or serum. Next day the arm was greatly swollen and very painful. Patient feverish. An abscess feared, but none formed. The fourth and fifth injections, on March 12 and March 17, respectively, were followed by only moderate local reactions.

The generalized systematic reaction which appeared in five cases is of a much more serious nature. It is worthy of note that four of these patients were in a very poor physical condition, having suffered from a gonorrheal infection for several years. The details of two of these cases follow:

CASE 2.—C. W., exhibited the prolonged chronic form of gonorrheal rheumatism with involvement of nearly all the joints of the extremities. He received the first injection of 20 minims of rabbit serum Oct. 27, 1905. This was repeated October 29, October 31 and November 3. Then on account of the local inflammation, the injections were suspended until November 11. On this date he received 40 minims of rabbit serum, and in less than a half a minute suffered from a feeling of suffocation, which was accompanied by a general superficial "flush." At the same time there was an effort at coughing. The pulse was very rapid and feeble, and the patient was greatly prostrated. After the administration of a little aromatic spirits of ammonia, the cutaneous blush and the severe dyspnea subsided, but the weakness and rapid heart action continued some hours. The following morning all these alarming symptoms had disappeared, but on the next day, the administration of 20 minims of the rabbit serum caused a repetition of the disturbance, though not quite as severe. Two weeks later, 20 minims of the serum was given without uncomfortable results. When the quantity of serum was again raised to 40 minims, however, a similar train of symptoms, in quite a severe form, resulted. Again, after the lapse of two weeks, 20 minims were given without any toxemia. Thus the quantity of the serum and possibly the time of administration were factors in this peculiar and sudden intoxication.

CASE 3.—S. had suffered from gonorrheal arthritis for several years. Beginning March 26, 1906, the injection of 2 c.c. of rabbit serum was given every other day for three doses without any reaction, but after the fourth injection of the same amount of serum, about eight days after the first treatment, the patient suffered from chills every afternoon. Temperature 102 F. in the afternoon and 100 F. in the morning. The chills were accompanied by general prostration and aggravation of pain in the joints. The same symptoms followed the next three weekly doses, but after that, twelve injections of the same amount of serum were given until September 1, without any general disturbance. About September 23, the patient received an injection of 2 c.c. of goat serum. Within half an hour he became semi-comatose and remained so for about twenty-four hours. Later treatments with sheep serum produced no ill effects.

The histories of these cases have been given in detail for the reason that some of the symptoms are decidedly suggestive of those occurring in guinea-pigs which have

received injections of foreign serum at certain definite intervals. It has been determined by Rosenau and Anderson,[3] and also by other investigators, that, although a single injection of normal horse serum may be entirely harmless to the animal, a second injection of a certain amount of the same serum after an interval of over ten days will often prove fatal within an hour. Some of the symptoms of this intoxication are coughing, retching, respiratory distress and coma. This condition of hyper-susceptibility or anaphylaxis (Richet) does not manifest itself, however, if the second injection is given in less than the incubation period indicated. Furthermore, if the injections of serum are repeated every few days the guinea-pigs become immune or, more correctly, refractory (Gay and Southard[4]) to the toxin in the serum instead of anaphylactic. Such being the case, it seems unlikely that the toxemias which arose in these patients after several injections of rabbit serum may be brought in line with the serum anaphylaxis of these animals, for the primary treatments have been given at much shorter intervals than the essential incubation period and should have induced refractory rather than a hyper-sensitive condition. Although some of the symptoms, such as dyspnea and semi-coma, occurring in these intoxications are suggestive of anaphylaxis, they are also characteristic of the poisonous action of endotoxins derived from various proteid substances, such as bacteria and tissue cells. It is possible, then, that we are dealing here with toxemia of this character. As we have stated, sheep serum has never given rise to the slightest generalized toxemia and may be used without fear of untoward results.

REPORT OF CASES.

During the past two years the serum has been distributed widely to applicants from all parts of the country and especially to many of the hospitals in this city. Histories and reports of the cases have been obtained in nearly every instance. About 22 per cent. of them have been treated personally by one of us (Rogers). We have spared no effort to obtain reports from as many cases as possible, whether we had reason to anticipate that the result would be negative or positive. The majority of the patients who have been treated with the serum were suffering with gonorrheal arthritis. We have collected reports of ninety of these cases, in which the diagnosis was reasonably sure and on whom the serum had received a fair test. These were of all degrees of severity and had lasted from a few days to several years. Forty-seven were mono-articular cases and forty-three poly-articular. By the use of the serum seventy-two or 80 per cent. of these patients were entirely cured, or much improved, and eighteen or 20 per cent. showed very slight or no improvement. Fifty-seven of these patients had received other forms of treatment for periods of a week to several years with slight or no improvement and were very much improved or entirely cured by the serum.

For further discussion these cases may be divided into: (*a*) acute, subacute and early chronic, (*b*) prolonged chronic.

(*a*) *Acute, Subacute and Early Chronic Cases of Gonorrheal Arthritis.*—In this list are included those of six months or less duration. Of cases of this character there were seventy-five. Of these sixty-four of the patients, or about 85 per cent., reacted very favorably to the serum, while with eleven, or approximately 15 per cent., the result was negative. These cases were for the most part of two to eight weeks' duration. The number of injections required averaged five. Thirteen of the patients were cured with three or fewer injections, and of these, four with only two injections. One patient recovered quickly after one treatment. Twenty-three patients were cured in ten days or less, and of these, six in six days or less.

The first injection often causes a transitory increase in the soreness of the joints and sometimes a moderate rise in temperature. Some improvement may be manifest at this point, but it generally appears first after the second or, at most, after the third injection. This is indicated by an approximation of the temperature to normal and a lessening of pain, and sometimes of the swelling. Often, however, the pain disappears from the joint much more rapidly than the swelling. The latter may then be advantageously treated by massage.

With two patients whose ankles were involved a periosteal tenderness on the plantar surface of the os calcis persisted, although the other symptoms were greatly or entirely relieved. Our statistics seem to show that the serum acted quite as effectively in cases in which there was a marked swelling of the joints with more or less redness, as on those in which the joint symptoms were less acute. There may be room, possibly, for a difference of opinion on this point. The following case reported by Dr. G. W. Webster of Chicago on Feb. 2, 1906, illustrates well the rapidity with which the serum acts on some of these acute cases:

CASE 4.—Patient, male, adult. First attack of gonorrhea two months before. Severe arthritis involving the right knee had been present for three weeks. The joint was much swollen, and the extreme pain rendered it almost immovable. The treatments during this time had included hot air, aspirin, nux vomica, protargol, urotropin, methylene blue, and oil of sandalwood. The patient was doing badly. At this time several injections of antigonococcic serum were given. After the first injection the pain almost entirely disappeared. It was completely gone at the end of the second day. On the third day he was able to move about freely and put some weight on his foot. At the end of a week the effusion was gone and the patient was walking about the house without the aid of a cane. In ten days from the beginning of the treatment he was completely well.

There seems to be no doubt in such a case that the rapid recovery was entirely due to the specific action of the serum. A second case is similar in character, with the exception that the patient had had several previous attacks of gonorrheal urethritis and the rheumatism was becoming chronic. The serum, it may be said, has acted as favorably in such cases as in those in which the patient was suffering from a primary attack of gonorrhea, but if there have been several previous infections of the joints the case always proves very obstinate. This case was reported from the third medical division of Bellevue Hospital, New York, by Dr. Satchwell, house physician, July 30, 1906:

CASE 5.—Patient, male, single, 30 years old. Has had five previous attacks of gonorrhea; the first ten years previously and the last ten weeks previously. The last attack was treated with injections at a dispensary. A slight discharge continued to time of admission to hospital. Eight weeks ago, after the discharge had diminished, the left wrist and the right knee began to swell. The swelling became marked, but redness was absent. Pains severe, aching in character. Three days later the left hip became painful and stiff. Patient felt feverish, but had no chills. Two weeks previously one of the toes of the left foot began to swell and became very painful. Since then the patient had been unable to move either lower extremity or the left hand on account of pain and stiffness.

July 14, Gram-negative intracellular diplococci were found

3. Jour. of Med. Research, xv, No. 1.
4. Jour. of Med. Research, xvi,, No. 2.

in smear from the urethra. On July 16, the left thigh was held in position of flexion and internal rotation. Marked tenderness about the joint; temperature 99 F. July 17, antigonococcic serum injected deep into left buttock. Severe aching pains in the joints, lasting for two hours, followed the injection. A slight rise in temperature. Joint conditions unchanged.

July 18. Tenderness in hip and wrist very much less. Motion in hip greater. July 19. Temperature normal. Serum given into the left buttock. Similar pains as on July 17 for two hours. July 20. Up in a chair. Tenderness in hip and wrist very much less. None in knee. July 21. Serum given into buttock. Pain again for several hours. (NOTE: This transitory pain in the lower extremities is apt to follow the deep injection of the serum into the buttock.) No tenderness. Up and about the ward. Temperature 99 to 100 F.

July 22. Up and about the ward; No pain or tenderness except at the site of the injection of the serum. Walks with a slight limp. July 23. Serum given as before. Pain for several hours. Temperature 100 F. July 30. Discharged from hospital, cured. No pain. No tenderness. Walked well. No limitation in any of the affected joints. Temperature normal. The following leucocytic counts show little change before and after the serum was administered, except an increase in the number of lymphocytes and a drop in the polynuclear neutrophiles.

	Before. July 14.	After. July 24.
Leucocytes	11,200	12,000
Polynuc. neut	65 per cent.	56.5 per cent.
Lymphocytes	28 per cent.	36 per cent.
Large mononclears	6 per cent.	5.5 per cent.
Eosinophiles	1 per cent.	.5 per cent.

(*b*) *Prolonged Chronic Cases of Gonorrheal Arthritis.*—The very chronic or protracted examples of this form of the disease, which may persist for months or years, do not readily recover under any treatment, and when there are pronounced deformities or ankyloses a complete cure is impossible. But with perseverance and the judicious use of a potent antigonococcic serum a great deal of good may be accomplished in a fair percentage of these otherwise hopeless invalids through the cessation of pain and active inflammation. To these patients the serum should be given twice a week for a month and then at intervals regulated by the symptoms. Ordinarily it is not wise to give a second injection before the reaction from the first has entirely subsided, as the discomfort may be considerable.

At the end of a month or more in a favorable case there is a gradual lengthening of the period of well-being after each administration of serum, and it may be necessary to give it only once in two or three weeks. In one of these cases the administration of the serum caused after a time the disappearance of shreds, apparently prostatic, from the urine. The pain in the joints followed a parallel course, decreasing with the disappearance of the shreds. After an interval when no serum was given, signs of recurring inflammation appeared, preceded by the appearance of the shreds. Another injection of serum, however, brought relief again, which continued for a longer period than before. The patient is still under the treatment and is steadily improving.

If there is no sign of a change for the better in a chronic case after four injections, we have found it useless to continue the treatment. It is impossible, of course, to explain every negative result, but if there is no improvement after treatment with a potent serum there is a possibility of an error in diagnosis or of infection by a strain of gonococcus for which the serum contains no specific antibodies.

As an example of the treatment of these prolonged cases, the following history may be cited:

CASE 6.—J. H., aged 31, single, male, had a first attack of gonorrhea in October, 1897. There was a constant urethral discharge for about one year, during which an epididymitis occurred and persisted for some weeks. In March, 1899, there still existed a moderate gleet. At this time the right hip became painful and stiff. Some months afterward, the left hip became involved and then the joints of the feet and spine. The patient tried every available "cure," including a severe course of mercury and iodid of potash at Hot Springs, Ark., but the rheumatism persisted, sometimes a little better and again worse. In March, 1907, he was able to dress himself only with assistance and was just able to get about. Both shoulders were stiff and painful; the "knuckles" of the hands were painful and swollen; the knees and ankles were in the same condition and showed over each joint one or two sharply limited areas of maximum tenderness. The urine contained an abundance of shreds, but in them no gonococci could be definitely identified. There was an increased frequency of urination and the prostate was slightly sensitive, but not appreciably enlarged.

During March, April and May, 1907, sheep antigonococcic serum has been administered about every eighth day. After each injection there occurred a noticeable improvement in the joint symptoms and the patient was able to put on his shirt and coat without assistance for the first time in years. As the pain decreased, the sleeplessness was greatly improved. The symptoms, however, would recur several days after receiving the serum, but was relieved by another injection. At first there was no change in the second glass of urine and it was not until the end of April that the shreds became noticeably less. This patient is still under treatment, but at present attends to all his affairs and moves about like a normal man. There is only a moderate amount of thickening around the basal joints of the right index and middle fingers, and some tenderness around the arches of both feet. The latter seems to be incipient flat-foot condition, as it is made worse by long standing or walking, and the muscular condition is poor.

In the following case, reported by Dr. W. A. Germain, of Sioux Falls, S. D., the recovery was rapid and complete:

CASE 7.—Patient, male, suffering with chronic gonorrheal arthritis and cystitis, had been under treatment for five years. During this period he had received almost every form of treatment, including deep injections, prostatic massage and thermotherapy. The patient received six tubes of antigonococcic serum during the period from Feb. 27, 1906, to March 30, 1906. After the first injection a quantity of shredded mucus was voided with the urine and the pain in the neck of the bladder entirely disappeared. The rheumatism was not improved. After the second injection, there were pus and shreddy mucus in the urine, but no improvement in the rheumatism. The urine became clear after the third injection, but the joint symptoms remained the same. The fourth injection brought about a decrease in the rheumatic pains, and after the fifth they disappeared. The patient since then has not had any return of the symptoms. The rabbit serum, which was used, caused a marked local swelling, which soon subsided.

Tendosynovitis.—Reports have been received from six cases of tendosynovitis which were treated with the serum. In four instances a cure was effected, while in two a primary improvement was followed later by a relapse. As a rule, these cases have responded very quickly to the serum and have required only three or four injections.

Infections of the Genito-Urinary Organs.—Dr. George K. Swinburne,[5] of New York, has already published a report of the treatment of several cases of epididymitis with antigonococcic serum. Further experience has borne out the promise of the earlier results. We have received reports from eight cases of this character. Six were entirely cured within a few days, one was very much improved, and in one there was no improvement. One to three injections have generally proved sufficient to effect a cure. The pain has markedly lessened or

5. THE JOURNAL A. M. A., Jan. 26, 1907.

ceased in nearly every instance after the first injection. The following case, reported by Dr. Swinburne, is of interest:

CASE 8.—The patient appeared at 10 p. m. with a first attack of epididymitis, which had started at 2 p. m. of that day and had steadily increased. The epididymis (left) was exquisitely tender, and distinctly enlarged. An injection of serum was given. At noon on the next day there was no pain and the testicle was not nearly as tender. On the following day there was no trace of any trouble. Another injection of serum was given. Two days later the urine was clear for the first time in a month.

This case illustrates the value of the serum in aborting incipient cases. The following report on a case of chronic gonorrheal cystitis is also furnished by Dr. Swinburne:

CASE 9.—W. K., aged 28, single, contracted gonorrhea first in 1902. This was followed by some prostatitis and cystitis. In May, 1906, massage of the prostate was begun and followed by some improvement, but there was a constant slight urethral discharge and the urine was always cloudy with pus. In November, 1906, the prostate was practically normal, but both the first and second glasses of urine were cloudy with pus and contained Gram-negative intracellular diplococci. Massage of the prostate and bladder irrigations with 10 per cent. argyrol solution were continued for four weeks, without improvement. Between January 5 and Feb. 2, 1907, the patient received nine injections of antigonococcic serum (sheep), and on February 9 all traces of the disease had disappeared. One month later, after a "beer test," the urine was found to be clear.

The history of our only case of gonorrheal salpingitis, which recovered quickly after operation and one injection, indicates that the serum may prove of value in this condition. It is, of course, impossible to determine exactly to what extent the serum hastened recovery after the evacuation of the pus:

CASE 10.—E. J., aged 21, domestic, entered St. Francis Hospital April 29, 1907, with a history of leucorrhea and cystitis for the past week. Five days previous to admission pain began in the pelvic region and later forced her to go to bed. Examination showed a moderate purulent leucorrhea, extreme tenderness and marked rigidity in the hypogastrium, uterus fixed and immovable, lateral fornices very tender, and a large, painful and tender mass behind and at the sides of the uterus. Temperature 103 F, pulse 120. April 30, under ether, a small puncture was made in the vault of the vagina behind the cervix and about six ounces of creamy, thick puss evacuated. Irrigation and drainage tube. This pus contained a very few organisms resembling gonococci, but no growth could be obtained.

May 1: Temperature 102 F. in the morning and the patient still complained of pain and tenderness. Considerable purulent discharge. In the afternoon 40 minims of antigonococcic serum (sheep) was injected.

May 2: Temperature 100 F., discharge much less.

May 3: Temperature normal, no discharge, no complaints, drainage tube removed. After this there was rapid improvement and on May 8 vaginal examination revealed nothing abnormal except the small granulating wound in the vault.

With three cases of orchitis, this serum therapy has effected a cure after two to four injections. Chronic urethritis, however, has not yielded readily to serum treatment. In two out of the three cases of this character, there was no improvement after a few injections of serum had been given, but in one the symptoms disappeared. In this case of fourteen months' standing, the first injection caused a profuse discharge from the urethra, but this gradually subsided until after the third injection it entirely ceased and did not reappear. As has been explained in treating cases of acute urethritis, it is useless to employ the serum.

Infections of the Eye.—A number of cases of conjunctivitis have been treated with the serum, both by local application and by injection, with little or no benefit. The negative results with such patients is doubtless due to conditions similar to those present in acute urethritis. With iritis, on the other hand, the results have been very promising in the two cases treated by the method. One of these, reported by Dr. Arnold Knapp, of New York, has the following history:

CASE 11.—Male, aged 22, gonorrhea two years previously, chronic discharge for eight months. One year previously, iritis in left eye, lasting two months. Recovered. Feb. 24, 1907, left eye became inflamed. Entered hospital. March 1, 1907, ciliary congestion, retina hazy, urine normal. Three injections of serum were given on consecutive days. This resulted in more congestion and the appearance of fibrinous exudate in the anterior chamber. Two more injections were given on the following days, resulting in the disappearance of the exudate. Patient felt better. During the week, March 8 to March 15, four injections were given. As a result the congestion of the conjunctiva became less, the iris normal, the pupil fully dilated, but some opacity existed in the retina. A week later the patient was discharged with the left eye practically normal. Since then there has been no relapse.

MODE OF ACTION OF THE SERUM.

The question remains: What particular properties of this serum exercise the curative influence? In attempting to discuss this point the following clinical phenomena, sometimes accompanying the administration, are of importance. With four patients who had had a more or less chronic discharge from the urethra, the first injection greatly increased this discharge, but after the second or third the flow of pus stopped entirely. Again, in a case of iritis, the first three injections of serum caused a greater congestion and the production of a fibrinous exudate in the anterior chamber of the eye, but after two more injections this all disappeared and the eye was much improved. Finally, in many cases of gonorrheal arthritis, especially in cases of long standing, the first two or three injections cause a transitory increase of pain and inflammation in the affected joints and may, in fact, "awaken" other articulations which have lain dormant for some time, but after a few more injections the pain and swelling generally disappear and the joints regain their normal condition.

At least two possible explanations may be offered of this frequent transitory increase of inflammation, occurring in some instances within a few hours after the administration of the serum. Wassermann and Brück[6] have advanced the theory that the increase of inflammation and rise of temperature after the injection of tuberculin into a tuberculous patient is due to the interaction of the tuberculin with an antituberculin present in the tissues. If a similar explanation is advanced for the phenomena under consideration, it would be necessary to prove that the antigonococcic serum contains a derivative from the gonococcus analogous to tuberculin. Although our experiments in this direction are incomplete, we have thus far found no evidence that this serum contains any appreciable amount of gonotoxin.

A second explanatory hypothesis, which may be advanced, is that the serum injected into the patient has brought about a local disintegration of the gonococci and a liberation of endotoxins. The presence of this toxin in the tissues would cause an inflow of exudate and pus, as has been determined by Schaffer[7] and others in man, and by Malvoski[8] through experiments on ani-

6. Deutsche med. Wochschr., March 22, 1906.
7. Fortschr. d. Med., 1897.
8. Ann. de Gynecol. et Obstet., 1899, III.

mals. From the evidence at hand this second view seems to us the more probable.

Granting the probability that the serum brings about the destruction of the gonococci in the tissues, two views may be taken of its mode of action: First, that the primary bactericidal action has taken place directly through the presence of specific immune bodies in the serum injected; second, that it has been brought about indirectly by phagocytes, which have been aided by an opsonic action of the serum. The weight of evidence seems to be rather in favor of the first hypothesis, because the increase in inflammation occurs often so soon after the injection of the serum, indicating that the endotoxins have been liberated directly into the fluids and not into the protoplasm of the leucocytes. Experiments, which will be published in detail later, also indicate that immune bodies are present in abundance in this serum. And, finally, because it is evident that the primary destruction of gonococci in immunized guinea-pigs takes place directly through the agency of the fluids and not by phagocytosis. An objection might be raised to this view on the ground that 2 c.c. (the usual dose) of serum would be diluted several thousand times by the blood and serous fluid of an adult man. Other potent bactericidal sera, however, have been found to act as at high dilutions *in vitro*, and antigonococcic serum to be effective must come from very highly immunized animals.

It is quite possible, furthermore, that the gonotoxin liberated in the tissues may play indirectly an important part in the curative process, in that it causes an inflow of exudate containing leucocytes. These phagocytic cells are then able to take up and digest more readily the remaining gonococci through their having been acted on by the serum. This idea is not an hypothesis unsupported by evidence, but it is substantiated by the increase of specific phagocytic action in guinea-pigs immunized to gonococcus. The details of these experiments will be given elsewhere. As has already been emphasized, there is no evidence that this serum is in any sense an antitoxin.

414 East Twenty-sixth Street.

THE LARYNX IN LOCOMOTOR ATAXIA.*

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PHILADELPHIA.

About five years ago, at the suggestion of Dr. Charles W. Burr, I examined the larynges of patients with tabes dorsalis at the Philadelphia Home for Incurables. Later I examined all the cases of that disease under Dr. Burr's care at the Philadelphia General Hospital, and also the cases then under the care of Drs. Spiller and Weisenburg at that hospital, these gentlemen having kindly placed their patients at my disposal for the purpose. This report of the examination in these cases may be considered a negative one, for practically nothing of great interest was discovered, but it seems worth while to bring up the subject for discussion because, in the text-books and elsewhere, one is led to believe that laryngeal trouble is rather frequently found in locomotor ataxia.

Of the cases at the Home for Incurables examination was possible in four, and the results are given in detail.

CASE 1.—E., male, tabes for eleven years; no history of throat involvement. Arytenoids swollen and edematous. If there was any paralysis of vocal cords it was on the right side; left cord came past middle line and approximation of cords was good.

CASE 2.—W., female, married; tabes for twelve years. Ptosis of eyelids; no throat involvement; cords normal.

CASE 3.—L., male; tabes for eight years; no throat involvement; cords somewhat thickened.

CASE 4.—G., male; tabes for nine years; arytenoids thickened and swollen; cords normal. No history of throat trouble.

A summary of the cases at the Philadelphia General Hospital can be tabulated as follows:

Total cases examined	27
View of larynx imperfect in	7
Cases in which examination was satisfactory	20
Larynx normal in	6

In twelve cases the left cord was found hyperabducted during respiration, its movements restricted during phonation; the ventricular bands had lost their tonicity and were flabby. In two cases the right cord was thus affected but not the left.

Of the twenty cases two were women, one having the left cord in the hyperabducted position. In none of the twenty cases was there any evidence of loss of sensibility. All patients suffered from chronic nasopharyngitis of various kinds and degrees, and the condition of the larynx was what one might expect to find in the average individual of their age and class of life. No constant lesion was observed except the one noted above, namely, hyperabduction of the vocal cord, and that was present on the left side in 60 per cent. and on the right side in 10 per cent., making a total of 70 per cent.

I have been unable to find a tabetic case with laryngeal crisis, and neurologists of my acquaintance say that they have rarely seen cases of that kind. To show the trend of opinion on this subject I shall quote from some of the recent books and periodicals:

Touche[1] states that twelve out of forty cases studied by him had laryngeal crises. Of these twelve one only did not have visceral crises also. Ten had gastric crises, three had crises of diarrhea and three had rectal crises. No record is given of laryngeal examination in Touche's cases.

A case is cited[2] in which the onset of tabes in an actor was heralded by laryngeal crises induced by overuse of the voice, and this suggests that the crises of locomotor ataxia may arise in a point weakened by previous strain or disease.

Dorendorf[3] reported the case of a man aged thirty-three, who suffered from bilateral posticus paralysis caused by tabes dorsalis. There was marked narrowing of the glottis with every inspiration. The condition persisted after tracheotomy, and was due to active contraction of the adductor muscles.

A case of bilateral abductor paralysis of the larynx in a tabetic was reported by Wishart.[4] The paralysis came on slowly in the first years of the disease and persisted after tracheotomy.

Greene reported[5] the results of examinations made in sixty cases of tabes. Out of the sixty cases examined nine (15 per cent.) presented laryngeal complications; six (10 per cent.) showed undoubted paralysis of one or both vocal cords; seven (12 per cent.) were affected with the laryngeal crises, three of these without evident paralysis of either cord, and one presented a jerky move-

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

1. Presse Med., August, 1899, lxix, 121.
2. Deutsche med. Wochschr., April 16, 1905, xxxi.
3. Berliner klin. Wochschr., Sept. 15, 1902.
4. Laryngoscope, October, 1902, 756.
5. Boston Med. and Surg. Jour., Jan. 25, 1906, 97.

ment of the cord in moving from the median line. (This wavering motion was also present in one of my cases.) The only form of paralysis which Greene saw was abductor paralysis. Of the six cases five were unilateral and one bilateral. These were further divided into three with partial and three with complete abductor paralysis; that is to say, in the former there was marked limitation in the outward excursion of the cord and in the latter there was absolute fixation of the cord in the median position. Greene found that laryngeal crises occurred among the earliest symptoms in all of his cases. In two the crises led to an examination of the larynx and subsequent detection of the disease of the nervous system.

Taking up now the text-books we find as follows: Coakley states that in the first stages of tabes there is occasionally seen a spasm of the laryngeal muscles resembling laryngismus stridulus. Such a symptom in an adult in the absence of foreign bodies should lead one to seek for other symptoms of tabes. Again he states tabes and bulbar paralysis may produce abductor paralysis, and that tabes sometimes causes complete recurrent paralysis, unilateral or bilateral.

Grünwald asserts that tonic spasm of the abductors is frequently seen in tabes, giving rise to the well-known laryngeal crises. The condition is characterized by sudden attacks of dyspnea with loud inspiration, the cords often remaining fixed in adduction for a considerable length of time.

Shurly thinks that spasm of the pharynx and soft palate may be a prominent symptom in locomotor ataxia, that vertigo with glottic spasm is frequently an expression of a crisis in this disease. Again he says that tabes is a frequent cause of recurrent paralysis, syphilis being the primary cause of the tabes. He quotes Avellis, who found in eighty-five cases of recurrent paralysis that five were due to cerebral affections and only two were due to diseases of the nervous system (such as locomotor ataxia?).

Burnett, Ingals and Newcomb state that anesthesia of the larynx is sometimes due to locomotor ataxia, as is also paralysis of the vocal cords, and that rarely laryngeal crises come as a first symptom of tabes.

Kyle speaks of laryngismus stridulus as occurring in the laryngeal crises of tabes, and that locomotor ataxia may produce absence of sensation in the larynx, or it may produce paralysis of the vocal cords, either unilateral or bilateral abductor paralysis.

Osler writes that in his experience the gastric and laryngeal crises are the most common forms of crises, but that even so laryngeal crises are rare. There may be true spasms with dyspnea and noisy inspiration. In one instance at least the patient died during the attack. He states that deafness and attacks of vertigo may be due to locomotor ataxia and that olfactory symptoms are rare in the disease.

The treatment of laryngeal crises of the spasmodic variety is variously given by the writers already quoted. Osler recommends that cocain be applied during the attack or the patient be given a few whiffs of chloroform or amyl nitrite. Grünwald recommends morphin, as he believes that the forced inspirations tend to increase dyspnea by exerting a sucking action on the vocal cords. Coakley speaks of using bromid of potassium and strontium, valerian, asafetida, and also advises the use of the galvanic or faradic current in the larynx in chronic cases.

CONCLUSIONS.

1. The larynx is very seldom seriously affected in locomotor ataxia.

2. Rarely, early in the disease, spasmodic abductor paralysis may sometimes arise, and should suggest to the laryngologist the possibility of tabes as its cause.

3. Late in locomotor ataxia one or the other cord (generally the left) is often found in a hyperabducted position.

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DISCUSSION.

DR. J. F. BYINGTON, Battle Creek, Mich., said that, in view of Dr. Harland's statements that he has been unable to find a case of tabes with laryngeal crisis, and that neurologists of his acquaintance say that they have rarely seen cases of that kind, he would report the history and symptoms of one patient of this class, examined two years ago. A man, about 45 years of age, in the initial preataxic stage of locomotor ataxia, was referred to him for laryngeal examination. The examination was negative except for some inflammatory thickening of the mucous membrane covering the arytenoids and of the vocal cords, due doubtless to the irritation caused by the laryngeal crises. No cause for the laryngeal spasm could be discovered other than the nervous trouble. The spasms occurred every day or two, and Dr. Byington was able to give a fairly accurate description of the attacks, since the patient had a spasm in his examination chair. He first complained of a burning, tickling sensation, which was very quickly followed by an attack of coughing and dyspnea. Inspiration was very stridulent, the patient was much agitated, grasping with both hands the seat of his chair, and apparently fearful of impending suffocation. The attack lasted for a minute or less, until the patient's respiratory muscles were sufficiently exhausted to relieve the spasm. He soon regained normal breathing, although he was considerably prostrated from the attack. Dr. W. H. Riley described a similar case which he had had some years before. The patient was a man about 45 years of age, in the first stages of tabes. The attacks came regularly, once in about three weeks, and were similar to those in the case above described. During the attack the patient was much prostrated and cyanotic. Between attacks he was free from dyspnea. Dr. Riley stated that the patient was not of a neurotic temperament.

DR. EMIL MAYER, New York City, considered it an important matter to which Dr. Harland had called attention because the possibility of laryngeal crises being associated with or following locomotor ataxia is frequently overlooked by laryngologists. Dr. Mayer had a very interesting case presented to him some four years ago, a man who had been suffering from locomotor ataxia to such an extent that he had to be aided at every step. He had a number of attacks of suffocation which were said to be laryngeal spasm as a result of his tabes. Examination showed that the man had a polypus within the larynx, the removal of which stopped all symptoms, and although slightly ataxic, he never had a recurrence of his so-called laryngeal crises.

DR. WILLIAM E. CASSELBERRY, Chicago, said that the word "frequently," no doubt, has been used rather loosely by authors, as one might infer that these laryngeal manifestations occur in a larger proportion of ataxic patients than is actually the case. As yet they do occur occasionally. He had observed a case of laryngeal crisis in a patient who was not at first noticeably ataxic, but who some years afterward did develop tabes in pronounced degree. The laryngeal crises in the form of choking and strangling attacks happened to be associated with an enlarged lingual tonsil by which Dr. Casselberry was misled into the belief that contact of it with the epiglottis caused reflex spasm, only to find finally that it was an advanced sysptoms of his tabes. But in proportion to the vast number of cases of tabes without laryngeal symptoms, those who have seen them can not be said to be numerous, and to this extent the essayist's point is well taken.

DR. J. SOLIS-COHEN, Philadelphia, said that in many cases

laryngeal paralysis is the first manifestation of the disease. If the disease begins in a center which leads to the larynx a laryngeal crisis will be the first manifestation. In such cases he gives pearls of amyl nitrite to overcome the laryngismus, constitutional doses of strontium bromid, and large doses of potassium iodid.

DR. W. G. B. HARLAND, Philadelphia, said that he did not wish to question the statistics or the insight of anybody who has written on the subject, but it seemed to him necessary to emphasize the rarity of the disease, which had been brought out in the discussion and he thought it proved by the fact that men of large experience have seen only one or two cases, and these they remember very clearly.

CLEANSING TREATMENT OF CHRONIC SUPPURATION OF THE MIDDLE EAR.*

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During an experience of twenty years' duration I have found that chronic suppuration of the middle ear will yield to cleansing treatment in the majority of cases, whether they be acute, chronic or perennial in type. In this statement I wish also to include those cases in which the infected area is spreading and those with acute exacerbation, both of which conditions are rightly considered very dangerous. The exceptions that do not yield comprise those cases in which the caries present is extensive enough to require more than a reasonable time for removal by natural processes; those in which there is an active osteitis; those in which the sepsis has spread to parts outside the bone; those in which the inflammation is due to some special form of infection, such as tuberculosis or syphilis, or, finally, cases in which vital parts are involved and demand immediate operation. All other cases are amenable to this cleansing treatment.

The cases must be selected with judgment according to the foregoing limitations. First of all, the tympanic drainage must be made sufficient, and this, of necessity, must depend on the location and size of the perforation in the drum membrane, as well as on the condition within the tympanum and attic. There may be a free opening in the drum membrane and yet the rest of the tympanum may be filled with granulations, epithelial masses, or cheesy pus, causing inadequate drainage. The antrum and cells may be filled with inspissated material. The condition of the Eustachian tube is of prime importance, since one of its functions is that of a drain for the tympanum, and also because when diseased it offers a road for the spread of bacteria from the pharynx. The nasopharynx must be attended to for the sake of the Eustachian tube.

If the drainage be sufficient and there are no collections of inspissated material, dry wiping followed by application of boracic acid powder gives rapid satisfactory results. If there is cheesy material within the tympanum, it may be wiped out or syringed out by means of Blake's middle-ear syringe with a strong solution of bicarbonate of soda in neutral salt solution. If on repeated trial this method does not seem to clean the middle-ear cavities sufficiently, and the physician believes that there is still some accumulation within, suction may be applied to the ear with advantage. This produces serous exudation and possibly some hemorrhage and there follows an edema of all the tissues which does not at once subside. The serous exudation and hemorrhage act as an antiseptic wash which neutralizes some of the bacterial elements and at the same time removes some of the solid particles. An advantageous hyperemia of the parts is also thus brought about. A persistent dirty discharge may require the use of hydrogen peroxid, followed by normal salt solution or alcohol or nitrate of silver.

When there is an area of caries, this should be treated by cleanliness, and, if the granulation tissue is not vigorous, stimulated with nitrate of silver.

After these various methods of treatment the ear ordinarily becomes sweet and clean; but in a certain number of cases a serous discharge continues. In order to stop this we must avoid all unnecessary irritation of the tympanum and make use of astringents either as dry powders or in solution. Powders of boracic acid and xeroformbismuth tribrom-phenolate are the best. Solutions of nitrate of silver, from 0.5 to 2 per cent. strength, are of value. When relapses occur they are treated according to the indication the ear presents at the time. The cases in which a perforation of the drum membrane remains after cessation of the inflammation require periodic examination and the removal of epithelium which may have accumulated within the perforation. This is necessary to insure against recurrence of inflammation. In Case 7, in which a relapse occurred, this very necessary precaution was neglected. The following cases are typical of the course and result of this treatment in some of the varieties of chronic middle-ear suppuration.

CASE 1.—Patient, a women, aged 51. A fetid perennial otorrhea had been treated by many specialists in many cities, in spite of which it persisted fifty years. The tympanic structures were lacking except a portion of the membrana tympani, which shut off the mouth of the tube and cloaked a remnant of the malleus. The incus was absent. There had been periods of mastoid tenderness. When I first saw the patient granulations were protruding from the antrum. Proper cleansing treatment was used and in two days the ear was dry and remains so. Hearing is fair.

CASE 6.—Patient, a man, aged 27, with otorrhea and mastoiditis. For at least thirty-seven days prior to consulting me, and probably much longer, he had had aspergillus in the canal and a perforation of the membrana tympani with accumulations of soft detritus. Watch was heard 13 inches from the left ear. There was tenderness on pressure over the mastoid antrum, and perforation of the inferior posterior quadrant of the membrana tympani. Air inflated by Valsalva's method passed readily through a capillary perforation in the drum membrane. On the third day of treatment, the second visit, the left ear heard a watch at 23 inches. Tenderness was still present over the mastoid antrum. The perforation was closed. Four months later left ear hears watch at a distance of 15 feet.

CASE 13.—A man, aged 25. At the first visit the temperature was 99.8 F. and pulse 90 at 12 m. The patient had had a running ear for four weeks. On the second day and second visit he had thick discharge and tenderness over the digastric groove behind the mastoid process, and at the tip of the mastoid process. On the third day and third visit there was pain in the ear, mastoid and temporal regions; the lymph glands below the ear were a little enlarged and sore. Dry cups were applied; there was no pus. The ear was permanently dry two days later. The perforation subsequently closed with improvement in hearing.

CASE 21.—The patient, an anemic, delicate woman, was one of Isador Müller's most famous cases. A perennial otorrhea since childhood had been treated by specialists in many cities. All tympanic structures were lacking except the stump of the malleus and a narrow border of the membrana tympani. Black sordes were removed from fundus of canal disclosing a dark

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bleb in the region of the antrum. There was a dark viscid discharge from the antrum; the bleb was opened and thick, dark blood escaped. The promontory was pale and waxy. Some soft detritus in the antrum was wiped out and boric acid was insufflated. Watch was not heard. At the next visit, eight days later, there was a little bloody discharge from the meatus. The next day, third visit, there was a little bloody discharge from the mastoid antrum; tympanum and antrum were wiped with alcohol. There was no further trouble.

CASE 24.—This case demonstrates the treatment of fetid otorrhea of many years' duration. The patient was a merchant, aged 29. The discharge came from the mastoid antrum through a perforation of the superior posterior quadrant of the membrana tympani of the left ear. When first seen by me the man had a scanty, thin, purulent discharge from the left ear. In spite of prolonged and various treatment, this ear had discharged for many years. There was a perforation of the superior posterior quadrant of the membrane, allowing a free passage up into the mastoid antrum, which contained some small granulations and cheesy detritus. The cavum tympani was shut off from the perforation by a cicatricial membrane.

Treatment.—The external auditory canal was cleansed by cotton pledgets, and, after a Blake's canula had been passed as far as possible through the perforation, a strong solution of bicarbonate of soda was syringed in. A considerable quantity of desquamated epithelial flakes and sheets were brought away. After the cavity had been thoroughly dried with cotton pledgets on a fine bent silver applicator, a solution of nitrate of silver, 2 grains to the ounce, was syringed in. On the second day at the second visit the discharge was no longer fetid, its consistency was better and quantity less. The cavity was again cleansed by the same method. Very little epithelium came out. After two days the patient was seen again. There was no discharge; the walls of the antrum were damp. The cavity was syringed as before, this time with nitrate of silver solution; the soda solution was omitted.

It was then dried with cotton and a little boric acid powder was insufflated through a small canula passed well into the cavity. Two days later the perforation was dry and lined with glistening epithelium. The hearing improved from 3 to 8 inches for the acumeter, and the patient's general health improved rapidly. The ear has remained in the same good condition for three years.

CASE 25.—In this case the ear had discharged for four years. The acumeter was heard at a distance of 3 feet. There was a very small perforation in the center of the posterior half of the membrana tympani, allowing a fetid, thin, purulent discharge; the membrane was very thick. Valsalva's inflation sent air through the perforation; the tympanic syringe was used. On the twenty-sixth day, the fourth visit, the perforation was enlarged. The tympanic cavity was found filled with flabby granulations. On the thirtieth day, the fifth visit, granulations were still in the tympanum; there was also tenderness over the antrum. On the forty-sixth day, the ninth visit, the condition was improved. On the forty-eighth day, the tenth visit, the perforation was again enlarged. On the fiftieth day, the eleventh visit, the patient was improved; dry cups were applied. On the fifty-first day, the twelfth visit, the patient was better; fetor was nearly gone; suction was used. On the fifty-fourth day, the thirteenth visit, there was no discharge or fetor; suction was used. On the fifty-eighth day, sixteenth visit, the acumeter could be heard at a distance of 15 feet; the middle ear was apparently dry. On the sixty-first day, the nineteenth visit, the middle ear was not yet healed. On the sixty-second day, the twentieth visit, the perforation was nearly closed; there was a profuse seropurulent discharge; suction was used. On the sixty-fifth day, the twenty-second visit, the patient was better; the perforation had spontaneously enlarged; there were still granulations in the tympanum. On the sixty-ninth day, the twenty-sixth visit, patient was better; the middle ear was nearly dry. On the seventieth day, the twenty-seventh visit, the ear was moist again and the perforation spontaneously enlarged. The granulations did not bleed so readily as formerly. On the seventy-second day, the twenty-ninth visit, the perforations were larger and the granulations less. On the seventy-third day, the thirtieth visit, the general condition was poor, tonics were presented and suction used; the middle ear discharge was chiefly yellow serum. On the seventy-fifth day, the thirty-second visit, patient was better; on the seventy-sixth day, the thirty-third visit, condition was worse again. On the seventy-seventh day, the thirty-fourth visit, it was much better, and on the seventy-ninth day, the thirty-sixth visit, the ear was permanently dry; the perforation was large.

CASE 27.—This case was referred to me by Dr. Clarence J. Blake of Boston, who had made the diagnosis of perforation of Shrapnell's membrane with caries of the neck of the malleus and a purulent discharge. The patient was a captain in the United States Army, aged 34. The purulent discharge had commenced in the right ear during service in Cuba in 1898, and, in spite of varied treatment, had continued more or less abundantly ever since. The disease had been much aggravated by subsequent service in the Philippines. Examination of the ear showed a small perforation in the center of Shrapnell's membrane, choked with granulations and a mucopurulent discharge.

Treatment.—Tiny pledgets of cotton on a fine bent silver applicator were passed through the perforation as far as possible in every direction, wiping it out as clean as could be and abraiding the granulations. The cotton could be passed easily into the antrum. Then, with a Blake's middle ear syringe and a specially fine canula, the tip of which had been bent and carried in as far as possible, a strong solution of bicarbonate of soda was syringed in all directions. By this means a considerable amount of desquamated epithelium was evacuated, particularly from the direction of the antrum. After the cavity had again been wiped with cotton pledgets, a saturated solution of boric acid in alcohol was syringed in.

Subsequent Treatment.—When no more epithelium could be dislodged, the bicarbonate of soda solution was not used, but the alcohol was continued. As the discharge diminished in quantity and became more transparent, syringing with nitrate of silver, 3 grains to the ounce, was substituted for the alcohol. After the discharge had ceased, and as long as the perforation still contained moisture, it was wiped out with cotton pledgets, and boric acid powder was blown in through a fine Buck's middle ear glass canula until the cavity was filled. On the next visit, since the boric acid filling was found undissolved, it was left intact and nothing more was done. After the boric acid had remained undissolved for six days it was gradually picked out and the perforation was left to contract, which it finally did. During the various relapses that occurred the treatment was resumed whenever the nature of the discharge so indicated.

Result.—After four days of treatment the acumeter was heard 3 feet away. In ten days the discharge had ceased and the acumeter was heard at a distance of 7½ feet. The discharge soon reappeared, but was brought under control once more. After a month the acumeter was heard 15 feet away. Again the discharge reappeared and again it was stopped. Finally the ear became permanently dry and the treatment was discontinued after a period of 66 days of treatment and office visits. No further discomfort or trouble in the ear has arisen since that time. Two weeks after final healing the acumeter was heard at a distance of 35 feet. The ear remains in the same good condition after an elapse of three years.

The accompanying table shows thirty consecutive cases of chronic purulent otitis media in adults treated by the cleansing method in my private practice. All the patients had received more or less prolonged attention from other practitioners before my treatment was commenced. Relapse occurred in one case. The longest period of suppuration was fifty years, the shortest five weeks. The longest period of convalescence was ten months, the shortest two days. The smallest number of treatments was one, the largest number sixty-five.

Since convalescence was established the cases have been under observation not less than nine months. During the period of this series a young woman was treated who had an ear which had discharged several years.

The perforation was small and the discharge fetid. After trying the cleansing treatment a short time without any particular change in the discharge, ossiculectomy and curettage were done and much carious bone removed from the outer tympanic wall, which was followed by permanent healing of the ear. This case is not included in the series because the cleansing treatment was discontinued as soon as the diagnosis was established.

Patients 24 and 27 were shown at the annual meeting of the American Otological Society, held in Boston, May 10, 1905. Cases 1, 3, 5, 8, 10, 11, 12, 14, 18, 20, 21, 23, 24 and 30 show a period of convalescence absurdly short compared with the shortest possible convalescence following a radical operation. The period of convalescence in Cases 4, 9, 15, 16, 17, 26 is about the same length as that following the ordinary radical operation, but instead of being subjected to the great discomforts of a capital operation and the loss of weeks from business, the patient suffers no added inconvenience and continues his daily avocation. In Cases 7, 19, 25, 27, 28 and 29 the patients had a prolonged convalescence, but were saved the discomfort, strain and risk of a serious operation.

In these days, when the radical operation is often performed for obstinate otorrhea, it is especially inter-

THE CLEANING METHOD IN THIRTY CASES OF CHRONIC OTITIS.

No.	Description.	Duration of Otorrhea.	Duration of treatment and number of office visits before permanent cessation of inflammation.	Final results.
1.	Large posterior perforation; incus absent; fetid discharge.	Since infancy; fifty years.	Two days; one visit.	No recurrence of inflammation.
2.	Discharge through double perforation, one anterior and one posterior to manubrium.	Seven weeks.....	Two days; one visit.	Perforation closed; hearing improved; no recurrence of inflammation.
3.	Slight fetid discharge.....	For years.....	Ten days; two visits.	Hearing improved with artificial membrane. No recurrence of inflammation.
4.	Discharge through large anterior perforation.	Since childhood.....	Twenty-one days; four visits.	Hearing much improved, with cotton pledget; no recurrence of inflammation.
5.	Recurrent otitis media purulenta chronica; small perforation of posterior superior quadrant; fetid discharge.	Six years.....	Three days; three visits.	Perforation closed; hearing improved; no recurrence of inflammation.
6.	Perforation of posterior inferior quadrant; thin purulent discharge; long standing mastoid tenderness.	Five weeks.....	Two days; one visit.	Perforation closed; normal hearing; mastoid tenderness ceased in 4 days; no recurrence of inflammation.
7.	Complete destruction of tympanic contents; tegmen, tympani and antra absent; slight, very fetid discharge which stopped after 5 months' treatment with 9 visits. A non-fetid discharge appeared 12 months later when patient was much run down; it was checked at one visit.	Six years.....	Fifteen days; four visits.	No recurrence of inflammation.
8.	Recurrent fetid discharge; extensive tympanic destruction.	Many years.....	Nine days; two visits.	Hearing improved; no recurrence of inflammation.
9.	Discharge from large anterior perforation.	Years	Three weeks; one visit.	Hearing a little improved; no recurrence of inflammation.
10.	Thin discharge from small perforation.	Years	Seven days; six visits.	Perforation healed; hearing improved; no recurrence of inflammation.
11.	Slight fetid discharge.....	Years	Ten days; two visits.	Hearing improved, with artificial membrane; no return of inflammation.
12.	Large inferior perforation; scanty discharge.	Fifteen years.....	Four days; one visit.	Hearing improved; no return of inflammation.
13.	Mastoiditis and purulent discharge.	Four weeks.....	Five days; three visits.	Perforation closed; hearing improved; recovery from mastoiditis; no recurrence of otitis media.
14.	Perforation of Shrapnell's membrane and lower half of membrana tympani.	Many years.....	Two days; one visit.	No recurrence of inflammation.
15.	Perforation posterior superior quadrant and granulations of tympanum.	Many years.....	Forty-two days; one visit.	No recurrence of inflammation.
16.	Fetid discharge; severe temporal and occipital headaches.	Sixteen years..... ...	Eighteen days; two visits.	Improved hearing; cessation of headaches; no return of inflammation.
17.	Diabetic; both ears show thin purulent discharge through small perforations.	Many years.....	Eighteen days; three treatments.	No return of inflammation.
18.	Mucopurulent discharge through nipple occluded by granulations.	Six weeks.....	Eight days; three treatments	No return of inflammation.
19.	Fetid discharge and granulations of antrum; very large perforation.	Twenty-three years....	Eight weeks; nine visits.	Good hearing; perforation healed; no return of inflammation.
20.	Otorrhea; destruction of anterior half of membrana tympani.	Discharged several months.	Twelve days; three visits.	Hearing distance increased 7 times; no return of inflammation.
21.	Thick bloody discharge from antrum; destruction of membrana tympani.	Since childhood.....	Nine days; three visits.	No return of inflammation.
22.	Small perforation; thin mucopurulent discharge.	Several weeks.....	Two days; one visit.	Perforation healed; hearing much improved; no return of inflammation.
23.	Discharge through large perforation.	Many years.....	Six days; one visit.	Much improved hearing; no recurrence of inflammation.
24.	Fetid discharge from antrum through perforation of posterior superior quadrant; granulations in atrium.	Many years.....	Five days; three treatments.	Hearing improved; 7 pounds gain in weight; no return of inflammation.
25.	Fetid discharge; small perforation..	Four years.....	Seventy-nine days; 35 treatments.	Improvement in hearing; no return of inflammation.
26.	Variable discharge from posterior perforation in thick cicatricial membrane.	Many years.....	Three weeks; one visit.	No recurrence of inflammation.
27.	Perforation of Shrapnell's membrane; purulent discharge.	Seven years.....	Nine and a half weeks; 65 treatments.	Great improvement in hearing; closure of perforation; no recurrence of inflammation.
28.	Capillary stricture of external meatus; fetid purulent discharge; mastoid tenderness.	Ten years.....	Eight weeks; two visits.	Hearing very much improved; external canal widely opened; no recurrence of inflammation.
29.	Granulations and soft epithelial masses in tympanum and antrum; destruction of membrana tympani; granulations protruding at fenestræ.	From childhood.....	Ten months; seventeen visits.	Hearing slightly improved; no return of inflammation.
30.	Discharge through large perforation.	Eight years.....	Two days; one visit.	Closed perforation; improved hearing; no recurrence of inflammation.

esting to note that it is possible to get a favorable termination of the disease even in some of the most difficult and complicated cases by the use of conservative methods of treatment, which aim at aiding Nature in her effort to expel the focus of infection.

Some one has said that the hearing should be conserved after a radical operation by preserving the annulus, ossicles, etc. That does very well if one is fond of fine dissection, but, as a matter of fact, there is a surer way to cure the otorrhea and to save the hearing without a radical operation in the cases in which the tympanic contents are in place. Only the rare cases of extensive acute osteomyelitis really require this *tour de force* in dissection.[1]

I first became familiar with the cleansing treatment of otitis media purulenta at the Massachusetts Charity Eye and Ear Infirmary in 1887 under the instruction of Surgeons J. Orne Green, Clarence J. Blake, Edmund D. Spear, Frederick L. Jack and Henry L. Morse and have practiced it ever since.

The lesson one may learn from a study of this method is that cleanliness or cleansing methods carefully applied in chronic middle-ear suppurations can give very satisfactory results and in some cases a rapid convalescence with good hearing.

DISCUSSION.

DR. J. F. BYINGTON, Battle Creek, Mich., said that no doubt in the hands of Dr. Bryant peroxid of hydrogen may be employed with impunity, but he protested against the indiscriminate use of this drug. In his ear practice it occupies but little place. He has found it efficacious occasionally in breaking up a hardened plug of wax, but he does not use it in the tympanic cavity. This fluid in the presence of pus goes off suddenly in all directions, much on the same principle as dynamite, and Dr. Byington believes that it is apt to open up new avenues of infection in any infected cavity and has little or no lasting antiseptic effect. Its action is purely mechanical, and he prefers to use dry air inflation of the Eustachian tube, or suction through the external auditory canal, to remove secretions from the tympanic cavity. In his experience the dry cleansing treatment advocated by Dr. Bryant has been most gratifying. He mentioned one case which forcibly illustrates its effectiveness. The patient had had an otorrhea for many years and had recently undergone an operation by a competent surgeon for removal of the ossicles. The discharge continued in an aggravated form after the operation, in spite of continuous treatment for some months. Both patient and doctor naturally were disappointed in the result, and the patient, a woman, was advised to make a change of climate. She came from Texas to Michigan. Dr. Byington does not know whether the Michigan climate was a factor in her improvement or not. At any rate the discharge entirely ceased and remained so after the second treatment, which consisted simply of dry wiping, inflation and blowing a very little boric acid into the outer canal. Her previous treatment had been the daily use of peroxid of hydrogen and syringing. Syringing simply dilutes what antitoxic fluids the tissues are able to produce, and lessens the resistance of the epithelium, to say nothing of the moist warm chamber it affords for the favorable growth of bacteria.

[NOTE: IN ADDITION TO THIS DISCUSSION, THE WHOLE SUBJECT OF MIDDLE EAR DISEASE RECEIVED A GENERAL DISCUSSION WHICH WILL FOLLOW LATER.]

1. The Radical Mastoid Operation Modified to Allow the Preservation of Normal Hearing, Trans. Amer. Otol. Soc., 1906, vol. x, part 2, pp. 292-295, N. Y. Med. Jour., Oct. 20, 1906, pp. 780, 781.

Race Culture.—We take vastly more pains in the study of the best conditions for the life and fine development of both plants and animals than we do in the growing of strong, beautiful, finely balanced children.—J. F. Rogers, M.D., in *Dietetic and Hygienic Gaz.*

OTITIC PHLEBITIS; ITS SYMPTOMATOLOGY, DIAGNOSIS AND TREATMENT.*

JAMES F. McKERNON, M.D.
NEW YORK CITY.

During the past ten years much has been written on the symptomatology of this disease, part of which has been of inestimable value to those of us whose work lies along these lines, so that at the present time we are enabled to classify various symptoms, which, combined with our clinical experience, places at the disposal of the practical otologist a group of fairly definite symptoms from which to make a positive diagnosis of the disease.

In speaking of the symptomatology of otitic phlebitis I shall follow the lines of my personal experience and do so under three heads. First, the symptomatology in the typical cases; second, in the atypical, and third, in those where the bulb and sinus are primarily involved, without macroscopic disease of the mastoid process. As the majority of cases coming under our observation are those secondary to a mastoid involvement, or developing after the mastoid operation has been done, there are a few definite symptoms present which are fairly constant and which enable us without delay to recognize this condition.

SYMPTOMATOLOGY.

Temperature.—The symptom which I consider by far the most important is that of temperature; it depends on the amount of septic material entering the general circulation. If this be large in amount it is at once followed by a rise from normal to 104, 105 or even 106 F., and frequently higher, and this is quickly followed by a remission to near the normal point or below. There may be only one rise during a period of twenty-four hours, or several may take place, depending on the rapidity and the quantity with which the poison is entering the general circulation. If the patient is kept under observation for several days these exacerbations of temperature become more frequent and the variations greater.

Chills.—These are present in only a proportion of the cases seen, possibly 50 per cent., and I incline to the belief that this percentage is high. When present they usually precede the rise in temperature, and in some patients are followed by profuse sweating. In many of the cases coming under our observation the patients exhibit no definite chill; they merely complain of a slight chilly sensation, and frequently this is overlooked unless the nurse in attendance is on her guard and watching for such a manifestation. In a postoperative mastoid case, with frequent variations of temperature, these slight chilly sensations are quite as important as though a decided rigor were present. In a communication before the American Otological Society in July, 1899, particular stress was laid on this point, and during the intervening years at least one-third of all the cases observed has borne out the importance of watching for this but infrequently spoken of symptom.

Pulse.—In cases of phlebitis, when there is a sudden marked elevation of temperature, there is a corresponding rapidity of the pulse rate ranging from 120 to 160 per minute. In cases exhibiting a lower temperature range the pulse is often between 100 and 130, and when the existing phlebitis is complicated by a collection of pus in the brain it is much slower.

* Read in the Section on Laryngology and Otology of the American Medical Association, at the Fifty-eighth Annual Session, held at Atlantic City, June, 1907.

Respiration.—In the earlier stages of this disease the respiratory changes are but slight, but increase during the hyperpyrexia, at times becoming as rapid as 40 or 50 a minute. This is especially noticeable in the younger patients.

Pain.—In many of the cases of phlebitis coming under our observation the degree of pain is greater than that present when only an ordinary mastoiditis exists or that subsequent to a postoperative case. The pain is usually referred to the side of the head and to the occipital region, and is many times localized in the region of the torcular. In a few of the cases where the internal jugular vein becomes infected early there is decided pain in the neck along its course, and occasionally that pain will radiate down over the chest of the affected side. During the past year I have seen two cases where such pain was pronounced in this region, and in each instance the pleura and lung were negative. In many of the cases the pain present in the neck is caused, I believe, by an infected chain of lymphatic glands rather than by any obstruction in the vein.

Nausea and Vomiting.—These symptoms are usually present at some stage of the disease in a moderate or pronounced degree. The patient usually complains of nausea first, particularly on being aroused or on moving the head. This may be followed by slight vomiting, which later becomes more pronounced after the drinking of fluids. It may, however, occur at any time independently of the taking of solids or fluids and the amount ejected is usually small.

Intraocular.—In only about one-third of the cases coming under my observation have eye symptoms been present. This may be due to the fact that the patients in many of the cases were seen and operated on early, and had they been left until a later period of the disease intraocular changes might have taken place. In a small number of cases, when the phlebitis has extended to the cavernous sinus, there is pronounced swelling and puffiness of the eye and lid on the affected side.

Vertigo.—This I have observed only in those cases of long-standing purulent middle-ear involvement or where the meninges were affected.

Cerebration.—This has invariably been normal except in advanced cases. While some of the patients are drowsy and do not wish to be disturbed, yet they answer questions intelligently when aroused. If, however, the disease be allowed to progress this drowsiness increases and is followed by evidence of impaired cerebration.

Physical Signs.—We occasionally find the presence of edema in the mastoid region and edema over and around the exit of the emissary and occipital veins. The sign described by Gerhardt, and to which has been given his name, namely, that when pressure is exerted over both the external jugular veins it will show a marked increase of blood passing through the vein of the unaffected side, I have never seen demonstrated. In some of the well-advanced cases, both in adults and children, there is a marked stiffness of the muscles of the neck on the affected side and the head of the patient is drawn well over toward the shoulder of this side, showing a marked torticollis, as it were. Combined with this there is a well-marked rigidity of the neck muscles present. A physical sign which the books tell us to look for in phlebitis of the vein is a hard, cordlike swelling in the neck. While unquestionably such a physical sign does occur, in my experience it is an infrequent one and only present in patients far advanced in the disease. I have been able to demonstrate such a condition but once, though I have tried to do so repeatedly before operation.

Metastatic Deposits.—In patients in which the disease is well advanced metastatic deposits may occur in any joint of the body, either single or multiple, closely adjacent to or remote from the original focus of infection.

General Symptoms.—Among these may be mentioned loss of appetite, a dry and heavily-furred tongue and a foul breath. The face is anxious, there is a pallid look, the skin is dry and later presents a yellowish tinge indicative of sepsis.

Atypical Cases.—These are cases invariably following a mastoid operation in which the patients usually do well for a few days after the mastoid has been opened. Then they become restless, irritable and disinclined to take food. The tongue, which before was clean and free from any coating, becomes dry around the edges and presents a whitish, glazed appearance in the center. The pulse increases from 100 to 130 or 140 a minute and there is a slow, gradual rise in temperature to 103, 104, 105 F. or higher, remaining so for several days. In some of the cases it will not vary a degree in twenty-four or forty-eight hours, while in others there is a little more variation, but there are no sudden drops and no sudden rises. The patient complains of headache and occasionally of nausea, but few reach the vomiting stage. They are unable to sleep for any considerable period of time, and if surgical measures are not instituted they later show all the signs of pyemia. There is no chill or chilly sensation present, cerebration is clear, the only evidence of any mental disturbance being an occasional irritability of temper, this being especially noticeable when they are first aroused. Later they become exceedingly drowsy, the skin begins to take on a yellowish hue and there is profuse sweating.

Physical Signs.—A physical sign which I consider of the utmost importance in this class of patients is that when we inspect the mastoid wound, in the early stages of the disease, we find every portion of it apparently doing well and covered with granulations except at one point, and this point is the bone forming the sigmoid groove. We will find the bone in this region darker in color than when it was first exposed at the time of the operation and there will be no granulations found on any part of it. In other words, we have a mastoid cavity showing all the evidences of healing except the bone over the sigmoid sinus. Should the infection progress farther and be allowed to go unchecked we shall find in three or four days that the mastoid wound presents an altogether different picture. The parts that formerly were covered with healthy, firm granulations have now become pale and flabby, with a tendency to soften and break down, while the bone over the sinus still remains dark in color, perfectly dry and devoid of any reparative process. If during the mastoid operation the sinus was exposed we find that at this stage the dura covering it presents a whitish or gray appearance, devoid of luster, and at times covered with a plastic exudate, and is pressure be exerted on this exposed area of the sinus it will be found easily compressible.

Bulb and Sinus Primarily Involved.[1]—In this third class of cases there is an acute purulent otitis present with the usual symptoms found accompanying this condition in an aggravated form. The subsequent symptoms detailed are, I believe, the result of a direct infec-

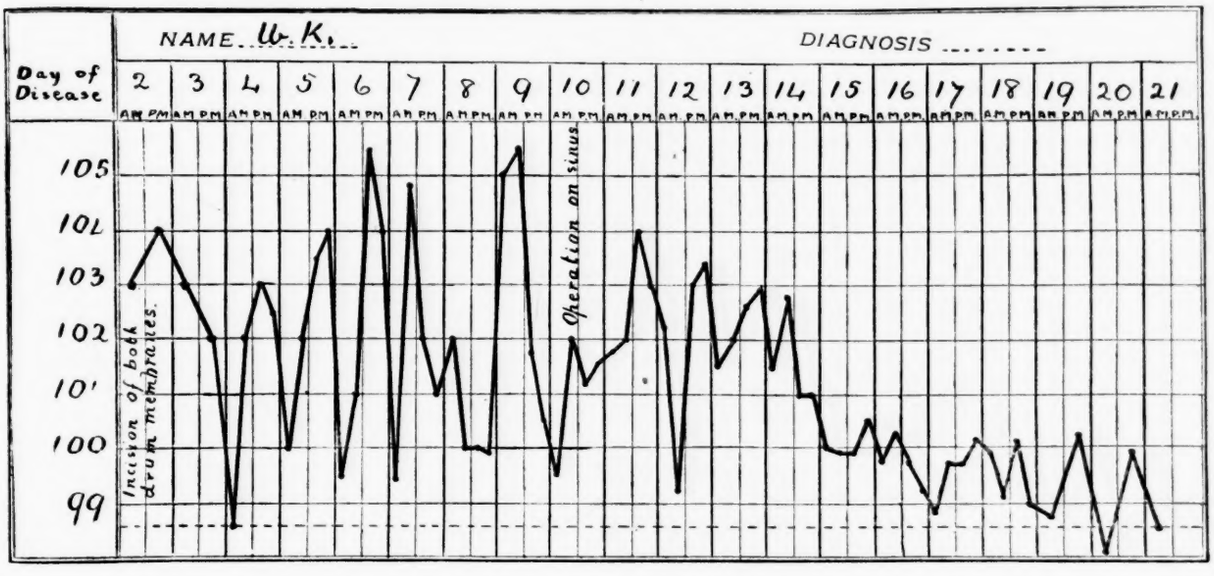
1. Abstract from paper read before the Amer. Otol. Soc., May, 1905.

tion from the tympanic cavity to the blood current closely adjacent, namely, through the floor of the tympanum to the jugular bulb. The explanation of the possibility of this is quite clear if we bear in mind the fact that in a certain percentage of the skulls examined we find an unusually high dome encroaching on the middle-ear cavity or a dehiscence existing in this region. Under such conditions as these it can readily be seen how an active purulent infection of the middle-ear cavity can primarily affect the blood current. Without having to travel its usual course through the venous structure of the mastoid bone, its pathway of infection is through the small communicating veins and lymphatics or by a process of absorption directly through the thin wall of bone in this region.

The symptom in these cases of greatest importance is an unusually rapid rise in temperature (see chart), from 99 or 100 to 104, 105 or 106 F., and quite as sudden as the rise, a fall to 97, 98 or 99 F., or possibly 100 F. The temperature may remain low for several hours and then quickly rise again to the points first mentioned, to be followed by a rapid remission, and this may go on

DIAGNOSIS.

The first class of cases is easily recognized, our diagnosis being based on the temperature changes and the presence of a chill or chilly sensation preceding the rise in temperature and following an operation on the mastoid. If most of the symptoms given in this class be present it is, of course, a comparatively easy matter to make a diagnosis, but if several are absent the diagnosis can be made from those given above. In those cases where the sinus is operated on at the same time that the mastoid operation is done, and we have no previous symptoms to guide us as to its involvement, we determine whether or not it is necessary to open the sinus at the time by the physical signs which are found presenting when the mastoid is opened. Briefly they are, at times the presence of a necrotic area of bone over and around the sinus, with usually an epidural collection of pus, commonly called a perisinuous abscess. The dura covering the sinus wall is at times thicker than normal and darker in color, or it may present a lusterless appearance, darker at one point than another, and usually the lower end toward the bulb is



indefinitely. During the exacerbations of temperature the pulse rate is rapid, ranging from 120 to 170 per minute. There is no chill present. The only evidence of one found in these patients is that if seen when the temperature begins to rise they will be found to have cold feet and hands. They are exceedingly fretful and irritable and later become drowsy. The eye signs are negative. If the temperature range is allowed to repeat itself for several days the tongue becomes white and dry. During the temperature remissions these patients, who are usually young children, feel remarkably well, will ask for food and wish to sit up and play with their toys. This is one of the phases of the disease which the parents and uninitiated find hard to comprehend. They see such an apparent improvement in the little ones that they are misled as to the dangers existing and often believe they are well on the road to recovery until the next rise of temperature occurs.[2]

a whitish or gray color. At times there is a grayish plastic exudate adherent to the sinus wall, the sinus looks flat and does not present a rounded appearance when divested of its bony covering, is easily compressible, and does not fill quickly when pressure is removed. In the absence of previous symptoms referable to sinus involvement the presence of an epidural or perisinuous abscess is not a positive indication for opening the sinus; it is only when the physical signs above described are present, with or without the epidural collection of pus. Neither should the sinus be molested if the dura covering it be protected by granulations, for this is Nature's effort to combat the presence of disease.

Bacteriologic examination of the discharge from the ear is of value in certain cases, as when the bacillus of Friedlander is found the infection is prone to greater activity, travels more rapidly, and the sinus and vein are involved earlier than in many of the other forms of infection. Another valuable aid in diagnosis is the differential blood count, not so much for determining whether a leucocytosis is present as to determine the polynuclear percentage. For example, if we find a

2. Since the original communication on Primary Jugular Bulb Thrombosis was published, thirty-six cases have been reported to me from different sections of the United States, Canada and Great Britain.

differential count showing a polynuclear percentage of over 80, no matter what the leucocyte count may be, whether great or small, we are almost certain to find an infective process which calls for surgical intervention. The leucocyte count is of value only in giving us information as to the patient's resistence to the disease.

In the third class of cases, namely, when the bulb and sinus are primarily involved, the diagnosis is made almost entirely from the rapid excursions of temperature closely following an acute purulent otitis. Bacteriologic examination of the discharge from the ear is of value here as in the other cases. The same is true of the differential blood count, and the utmost importance should be attached to it; when the polynuclear proportion is found to be between 85 and 95 per cent. I believe this is a positive evidence that the patient is suffering from an acute septic process. As a still further aid in diagnosis all diseases should be ruled out by a process of elimination before operation is decided on.

TREATMENT.

No hard and fast lines can be laid down by saying that the same method should be followed in all cases, but we should treat each individual case as seems best to us at the time we are dealing with it. The treatment in the first and second class of cases does not materially differ. When a diagnosis of sinus phlebitis has been made the bony covering should be removed from the sinus from a point above the bend or knee down to the region of the bulb. Too much bone should not be removed posteriorly so as to uncover a large dural area over the cerebellum, as it is in this region that a hernia is liable to occur rather than at other points, and its occurrence is usually invited when a large amount of the bony covering posterior to the sinus has been removed. After the sinus has been exposed a small piece of iodoform gauze should be rolled up and placed over the upper end of the exposed sinus and pressed firmly under the edge of the bony groove so as to cut off the circulation in the vessel, should it be present. A similar piece of gauze should now be placed over the sinus in the region of the bulb and pressure exerted here, after which the dura forming the anterior sinus wall should be incised freely with a scalpel or scissors, between these points, and the contents of the sinus evacuated. Should we be unable to obtain a flow of blood from the distal end of the sinus after the pressure has been removed in this region by taking the roll of gauze away, then we should make a further exposure and proceed backward as far as the torcular, providing we do not secure a free return flow of blood before reaching it. For if we do not obtain a blood current in this region sufficiently free to show that all obstruction has been removed our patients do badly subsequently, either from an extension of the infective process to other blood channels or from an encephalitis which may develop one or two weeks later, caused by an extension from the infection we have left in this region.

When pressure has been removed from the bulbous portion of the sinus we at times encounter a free return flow of blood, but whether the source of such hemorrhage be from the internal jugular vein or from the inferior petrosal sinus, we are unable to say, for it is as likely to come from one as the other. Nevertheless, when such a free return flow is present, and the sinus above contained, on opening it, a parietal or firm and non-disintegrated clot, we usually end the operation here by packing gauze into the sinus and await further developments. If, on the other hand, we find on opening the sinus, pus or a disintegrated clot present, we should desist from any further manipulations above at once, protect our already exposed field of operation and proceed at once to expose, ligate and resect the internal jugular vein from a point below at the clavicle to its exit from the skull. Should any of its tributaries be found involved they also should be ligated and resected well beyond any point of visible involvement. All diseased glands encountered during the resection of the vein should be removed. After this has been done the contents of the sinus should be evacuated above.

In many cases where the vein has been removed primarily before the evacuation of the sinus contents from above we find that the return flow from the bulb region is quite as free as we would expect to find it if we had the internal jugular vein carrying on its usual function, the blood coming no doubt from the inferior petrosal sinus. If, as occasionally occurs in this region, we are unable to obtain a return flow of blood from the bulb after the vein has been removed below it means that the inferior petrosal sinus is involved in the phlebitis. When such a condition confronts us (which, fortunately, is not frequent) we should, if the patient's general condition will allow it, expose the inferior petrosal sinus and remove the obstruction, as otherwise we are courting danger by allowing an infective process to remain, which may at any time cause further trouble. Should the superior petrosal sinus be found involved in the phlebitis it should be exposed and treated in a like manner.

In phlebitis of the internal jugular vein, complicating a similar condition of the sinus above, the first step in the treatment should be the exposure, ligation and removal of the vein, and this should be followed by evacuation of the contents of the sinus above. The method of treating the neck wound is optional, whether by the open method—to be later drawn together by straps, or by suturing at the time of the operation and inserting a large cigarette drain. I prefer the latter method, with wet saline dressings, changing every twenty-four hours, and each time the dressings are re-applied a small portion of the drain is removed, so that at the end of the fourth or fifth dressing the drain has all been removed and, in the majority of cases, primary union accomplished.

In the cases of primary involvement of the bulb and sinus, the patients being nearly all young children, the ideal treatment would be the same as in our other cases, but here we must remember that these cases are caused by a primary infection of the blood current, and when operated on early the percentage of recoveries is in favor of removing the clot without ligating the vein. For these little patients do not bear prolonged operations well, and it is a matter of much more difficulty to ligate and resect the internal jugular vein in a very young child than it is in an adult, for we have to deal with a neck that is short and chubby, and usually a number of enlarged glands to encounter, which prolong the operation, many times beyond the safety point. If, however, ligation becomes necessary later, owing to lack of favorable progress in our patient's condition, it can be done rapidly without subjecting these little ones to the added risk of a prolonged operation.

It must be said, however, that in this class of cases, when a so-called free hemorrhage is obtained from below, we can never be sure that all infective material has been removed, for so far it has been an impossibility to pass a curette from above into the jugular bulb, and

in all probability a large number of our patients operated on without ligation of the vein have some infective material left in this region, not, however, in such quantity that the system can not care for it, for were this so such cases would all be fatal. There is a type of cases in these young children to which strong exception must be taken to the conservative method of treatment, namely, those cases when on opening the sinus pus or a broken down clot be found. When such a condition exists, whether there be free hemorrhage at the bulb or not, I believe it is imperative for the safety of the patient that the vein be removed at once.

The treatment of the metastatic deposits may be either palliative or operative. When palliative the ice pack is used or the affected part may be enveloped in cloths saturated with the oil of gaultheria. A solution of lead and opium has also been used with good results. If pus once forms in the tissues affected the parts should be opened freely, drained and treated on general surgical principles.

A word about those cases of otitic phlebitis that show, prior to the operation, all of the positive evidences of an infective process present in the sinus and yet when we explore the sinus no clot can be demonstrated, but the patient begins to improve and goes on to complete recovery. What is the explanation? Simply that we had a small parietal or central thrombus to deal with and that when the sinus wall was freely incised there was a sudden gush of blood outward, which carried the clot with it, and many times careful search will reveal such a thrombus adherent to the towels surrounding the patient's head or neck or to the gauze that has been used in sponging.

In all cases of otitic phlebitis in which the patients were operated on with or without ligation and removal of the vein, when a varying postoperative temperature curve is shown, it means that there is still some infective material being displaced from time to time. The patients improve, notwithstanding, because the greater part of it has been removed and the system, thus strengthened, is enabled successfully to care for what remains. In all operative cases the time element is one that enters largely into a favorable prognosis, for the shorter the time that we keep our patients on the operating table the quicker will be their convalescence. I am convinced that our results would be better did we operate during the temperature remissions rather than when the temperature is at its height, for if operation takes place while the temperature is low the system certainly has more reactive power, there is less depression, and a more rapid convalescence surely follows.

62 West Fifty-second Street.

DISCUSSION.

DR. E. E. HOLT, Portland, Me., said that he agreed with Dr. McKernon's arrangement of the symptomatology and that the variations in the temperature from the normal were of first importance. In typical cases, the sudden rise of temperature, together with the quickened pulse, furred tongue, glassy eyes, dry, yellowish skin, give a clinical picture that points to involvement of the veins in connection with inflammation of the middle ear. Not infrequently the otologist opens the mastoid and removes the outer bony wall of the lateral sinus to find nothing to warrant him in opening the membranous lateral sinus. The patients, too, make good recoveries. It is probable that the free drainage gives the patient a better chance to recover. There are other cases in which the clinical picture is as complete, in which from one cause or another no operation is done and the patient finally makes a good recovery. Dr. Osler says: "Pyemia is a disease frequently overlooked and often mistaken for other affections." If this is true in general it is especially true in regard to sepsis from inflammation of the middle ear, and it must follow that there are many cases of otitic phlebitis in which Nature overcomes the difficulty, but this is not mentioned as an excuse for not treating these patients according to well-established surgical principles. As the variation in the temperature from normal is one of the greatest sources of information in phlebitis it can not be too strongly urged that the clinical thermometer should be used frequently. Dr. Holt has no doubt, he asserted, that this variation in temperature has been missed many times, because it has not been taken often enough. But, however important the variation in the temperature may be, it must not be depended on alone, but keep constantly in view other symptoms and the general condition of the patient.

In this connection he referred to a case in which ablation of both mastoids was followed by one of the most remarkable variations on record in the temperature of the different parts of the body at the same time, and of the whole body at different times. There existed extreme high temperature in the mouth, with extreme low temperature in the rectum, then changing to low temperature in the mouth, with extreme high temperature in the rectum, again changing to extreme high temperature in both mouth and rectum, to be followed by extreme low temperature in both. The extremes of temperatures were not measured by any available thermometers that registered from 94° F. to 114° F., and four thermometers were broken by the intense heat. Later amblyopia developed in both eyes. There was complete recovery. (The report was published in the *Journal of Medicine and Science*, May, 1902.)

In septicemia in general, chills are regarded as one of the most important diagnostic points to determine. He is inclined to think that they were present in a larger percentage of the cases he has observed than that given by Dr. McKernon. It is often very difficult to find out that they did occur, because that stage is passed and more serious conditions engage the attention of the patient and his attendants. The pulse usually increases in frequency with the rise in temperature, but in Dr. Holt's experience it has not, in some cases, shown a corresponding variation from the normal. In older persons the respirations may not be noticeably increased except in the more serious cases. Pain in the posterior part of the mastoid and occipital region, loss of appetite, nausea and vomiting are usually present. Dr. Holt has repeatedly examined the eyes, and only in a few cases has he seen any inflammation of the fundus referable to the middle ear. The atyical cases, or those following operations on the mastoid, in which apparently every indication was met at the time of operation are the cases that give us the greatest concern. The mastoid operations, as Dr. McKermon says, usually do well for a time, then symptoms come on indicating involvement of the veins. These cases are a source of great concern both to the surgeon and to the patient, because they are so unexpected, and instead of the patient getting better he is getting worse. This is often apparent to the friends and relatives of the patient, as it is to the surgeon, and it gives rise to doubt and anxiety on the part of all concerned. As surgeons we must expect to take our share of such cases and we must be prepared to explain the cause and act for the best interests of the patient, though it involves another operation on a patient whom the relatives and friends think can hardly survive it. It is a satisfaction to the surgeon to know that in almost all the cases health is finally restored to these patients, but it takes courage and prompt action to carry them through. In regard to cases in which the bulb and sinus are primarily involved in acute purulent inflammation of the middle ear, Dr. Holt's thinks that Dr. McKernon's explanation of the cause is acceptable, for it gives a reasonable explanation of the etiology of this unusual complication. The wonder is that it does not happen ottener, for earache followed by suppuration is common to almost every child some time during adolescence.

[NOTE: IN ADDITION TO THIS DISCUSSION, THE WHOLE SUBJECT OF MIDDLE EAR DISEASE RECEIVED A GENERAL DISCUSSION WHICH WILL FOLLOW LATER.]

SERUM DIAGNOSIS OF SYPHILIS.*

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Of the recent advances in serology there is hardly any phenomena which seems to promise the attainment of such practical clinical importance as the method developed by Wassermann for the demonstration of antibodies in the body fluids of syphilitics.

By this method, of the value of which we have been persuaded as the result of our own investigations, one is enabled to determine with almost positive certainty, in a large number of cases, the existence of syphilis in an individual irrespective of the length of time he has had his infection.

It may be asserted, but with reserve, that the scope of this test seems to extend beyond diagnosis and to allow one to judge in some degree the efficacy of previous treatment and also to venture some judgment as to prognosis.

The first communication on this subject was published by Wassermann, Neisser and Bruck.[1] They called attention in this article to the possibility of demonstrating *in vitro* syphilitic antibodies in blood serum and specific material in syphilitic tissues.

Through further extensive experimental work of Wassermann and his school[2] this matter was placed on a broad basis, not restricted to the finding of antibodies only, but also syphilitic virus. For this latter purpose Neisser, Bruck and Schuch made extensive examinations of extracts of red corpuscles of luetics. These examinations, however, do not seem to us to be convincing.

Its first application in clinical medicine was made by Wassermann and Plaut.[3] They found syphilitic antibodies in the spinal fluid of 78 per cent. in forty-one cases of progressive dementia.

The demonstration of specific antibodies in the spinal fluid and serum of luetics was confirmed by Detre,[4] Schutze,[5] Morgenroth and Stertz[6] and Marie and Levaditi.[7] The three last named authors examined the spinal fluid of dementia paralytics and tabetics. Through the demonstration of luetic antibodies in a large percentage of the cases they were able to confirm the syphilitic etiology of a large proportion of these diseases. During the examination of a considerable number of control cases not dependent on a luetic infection Marie and Levaditi obtained uniformly negative results.

The examination for antibodies was applied by Bab[8] to the milk of syphilitic women, and in all four examined he was able to demonstrate syphilitic antibodies. Citron[9] has recently applied this reaction to a large number of clinical cases with striking results.

Before entering into a discussion of our own examinations we will attempt to explain the principle and technic of the method employed by Wassermann.

The principle consists in the fixation of complement, a phenomena first observed by Bordet and Gengou.[10] In order to make clear the method it would be best to describe it in detail.

It is a well-known fact that if you introduce the red blood corpuscles of one animal *a* into another of a different species *b*, the blood of the latter acquires the power to dissolve the blood corpuscles of *a* when mixed with them in a reagent glass. This reaction is termed hemolysis. The acquired hemolytic property is dependent on two substances. One of these is present in the blood of every animal and is known as complement. It is thermo-labile, that means it is rendered "inactive" by heating the blood to 132 F. for half an hour. The other substance, which results from the reaction of the injected animal against the injected blood corpuscles, is thermo-stabile (withstands heating to 132 F.) and is known as "immune-body" or "hemolytic amboceptor."

The name amboceptor is derived from the fact that it has affinity on one side for blood corpuscles of the species of animal *b* from which they were taken for injection, and on the other side for the substance described above as complement, this latter union taking place only after the first mentioned affinity has been satisfied.

These three substances comprise what is known as a hemolytic system and their combination leads to hemolysis, which means that an opaque suspension of blood corpuscles is rendered transparent or "laked."

If an hemolytic serum is inactivated (by heating to 132 F.) before adding to the suspension of blood corpuscles, hemolysis will not occur. But if to this mixture of inactivated blood serum and blood corpuscles the serum of any other animal (every fresh blood serum contains complement) is added, reactivation of the inactivated serum takes place and hemolysis follows.

Parallel with the production of an hemolytic amboceptor by the injection of blood corpuscles the injection of other bodies, as bacteria (or albuminoid substances), gives rise to the formation of a corresponding amboceptor which likewise has the property to fix itself on the one hand to the corresponding bacteria, if the anti-serum is mixed with the bacteria or an extract of them, and on the other hand to complement. Bordet and Gengou took advantage of this principle to determine the nature of an infection by mixing the inactivated serum of the infected animal with the supposed bacteria and adding complement. If the serum in question contained immune bodies (amboceptor) against the bacteria, a union between bacteria, amboceptor and complement took place. If to such a mixture, after some time, blood corpuscles + inactivated specific hemolytic serum is added, solution of the blood corpuscles can not take place because the complement necessary for the hemolysis has been absorbed by the combination of bacteria + bacterial amboceptor. A solution would occur, however, in case that the serum did not contain immune bodies against the bacteria, as in this case free complement would persist and be ready for union with the hemolytic amboceptor + blood corpuscles. It is clear that this method not only admits of demonstrating antibodies (immune bodies) in a serum containing them, but also admits, in case we have a serum of known antibodies, of demonstrating the substances which gave rise to their forma-

* From the First Medical Clinic of the University of Berlin.

1. Deutsche med. Wochschr., 1906, xix, p. 745.
2. Neisser, Bruck and Schuch: Deutsche med. Wochschr., 1906, xlviii, 1937. Wassermann, Neisser, Bruck and Schuch: Zeitschr. f. Hygiene, vol. lv, 3d part, p. 451.
3. Deutsche med. Wochschr., 1906, xliv, 1769.
4. Wien. klin. Wochschr., 1906, xxi.
5. Berl. klin. Wochschr., 1907, v.
6. Virchow Archiv., clxxxviii, No. 1.
7. Anns. de l'Institut Pasteur, 1907, No. 2.
8. Fol. hæmat., 1907, iii, p. 437.
9. Verhandl. d. Ver. f. inn. Mediz., June 3, 1907. Will appear in the Deutsche med. Wochschr.
10. Anns. de l'Institut Pasteur, 1902.

tion.[11] The above is the principle of the method applied by Wassermann, Neisser and Bruck to the demonstration of antibodies in the body fluid of syphilitics or of antigen in syphilitic organs.

For the carrying out of the reaction the following substances are necessary:

1. As antigen: Extract of liver or spleen of a syphilitic new-born, and as control similar extracts of normal organs.

2. As antibodies: The serum or spinal fluid of the suspected syphilitic person, and as control the serum of a non-syphilitis.

3. As complement: Guinea-pig serum (or any other fresh normal serum).

4. As hemolytic inactivated serum: Preferably the serum of a rabbit previously treated with washed lamb's blood corpuscles.

5. A 5 per cent. suspension of washed, defibrinated lamb's blood corpuscles.

ORGAN EXTRACTS.

In detail the preparation of the necessary substances is, according to Wassermann, as follows:

1. The syphilitic and also the normal organs are, as quickly and aseptically as possible, cut up finely and dropped into physiologic salt solution in the proportion of 1 gram organ to 5 c.c., to which phenol (carbolic acid) is added to the extent of ½ of 1 per cent. This ½ per cent. phenol salt solution is placed in a shaking apparatus and constantly shaken for twenty-four hours. The organ extract so obtained is centrifugated to complete clearness of the overlying liquid, which is decanted off and kept on ice ready for use.[12]

2. The sera, secured either by coagulation or by immediate defibrination and centrifugation, and the spinal fluid are, as soon as possible after obtaining them, inactivated.

COMPLEMENT.

3. Guinea-pig blood is defibrinated and centrifugated, or obtained by coagulation.

4. Hemolytic serum, prepared as previously indicated by injecting a rabbit with washed lamb's blood corpuscles. This injection is usually repeated at intervals of one to several weeks, two injections being usually sufficient, and the blood taken from rabbit about eight to ten days after last injection. It is necessary that this serum be of high power, that is, that 1 c.c. dissolves, in attenuation of 1 part of serum in 1,000 to 2,000 parts of salt solution, with guinea-pig serum in the quantity of 0.1 c.c. as complement, 1 c.c. of a 5 per cent. suspension of red blood corpuscles in two hours.

5. The red blood corpuscles are prepared by defibrinating. To 5 c.c. of the blood so prepared, salt solution is added and the mixture centrifugated. This process is repeated two or three times in order to remove all serum. After pouring off the salt solution 100 c.c. of salt solution are added to the blood corpuscles, making a 5 per cent. suspension. It is necessary to note that the quantities of the different substances employed may at times have to be varied because of the varying power of the active constituents of same.

In general the following proportions are used and usually prove satisfactory. The substances are so diluted with salt solution that each c.c. represents the necessary quantity employed in the reaction. Into a test tube pour 1 c.c. of a 20 per cent. physiologic salt solution of the syphilitic liver extract (= 0.2). Add to this 1 c.c. of a 20 per cent. solution of the suspected syphilitic serum (= 0.2). Then add 1 c.c. of a 10 per cent. solution of the guinea-pig serum (= 0.1), shake and place in incubator for forty-five minutes. Remove and add hemolytic amboceptor (the quantity of the latter used is twice the amount found necessary, with the above quantity of complement, to dissolve 1 c.c. of a 5 per cent. suspension of red blood corpuscles in an incubator in two hours) and 1 c.c. of the suspended erythrocytes. The result of the reaction is determined after the reagents have been two hours in an incubator and twenty-four hours on ice.

To assure accuracy of the test, all tubes should contain the same quantity of fluid, and where one or more of the substances are not used in the controls mentioned below the difference should be made up with salt solution.

A series of controls absolutely essential to judging the result of the reaction are carried on at the same time. The essentials to be fulfilled by the controls are as follows: 1, That none of the employed substances alone (as sometimes occur) bind complement; 2, that the absorption of complement occurs only between the specific liver extract and syphilitic serum.

It is, therefore, evident that the following controls are necessary (also see protocol):

1. Suspected syphilitic and normal serum (Tubes 4, 5 and 8, 9).

2. Suspected syphilitic serum with normal liver extract (Tubes 10, 11).

3. Syphilitic liver extract without serum (Tube 3).

4. Normal liver extract without serum (Tube 12).

5. Syphilitic liver extract with normal serum (Tubes 6, 7).

6. Suspected serum and control serum alone, without liver extract or complement, in order to see if they were sufficiently inactivated (Tubes 19, 20).

7. Liver extract (both syphilitic and normal), without complement and hemolytic amboceptor, to see that they do not dissolve blood corpuscles alone (Tubes 15, 16).

8. Complement, amboceptor and blood corpuscles to demonstrate the hemolytic action (Tube 17).

9. (a) Amboceptor and blood corpuscles (Tube 21) and (b) complement and blood corpuscles (Tube 18) alone. Solution should not occur.

10. Normal liver extract and normal serum (Tubes 13 and 14).

The application of the reaction is at times accompanied by certain difficulties which render its interpretation uncertain. Chief among these may be mentioned the organ extracts which, aside from the variability of the amount of specific material they contain, sometimes undergo suddenly such change that they lose their antigen, or they begin of themselves to fix so much complement that they can not be further used in the quantities necessary for the reaction.

The specific luetic reaction of Wassermann has been questioned by Weil,[13] who, proceeding from the observation of Levaditi that luetic serum caused a slight binding of complement when mixed with normal liver extract, experimented with carcinoma extract and claims

11. All substances which, when injected into animals, are capable of producing antibodies are in general called "antigen."

12. Other methods of preparing the extract, with which we have no personal experience, are described by: 1. Levaditi and Marie, who dried the organs in a vacuum, pulverized them and took for every experiment as much as was required. 2. Morgenroth, who conserved the organs by freezing them and prepared the extract as needed by rubbing up with sea sand and salt solution and filtrating and centrifugating to complete clearness.

13. Wien. klin. Wochschr., 1907, 18.

to have observed a binding of the complement when same was substituted for luetic liver extract in the reaction with luetic serum. Reasoning on this basis, he questions the specificity of the complement fixation with luetic liver extract and luetic serum.

So far as the slight complement fixation noticed with normal liver extract is concerned, we can confirm the observation of Levaditi, but this slight complement fixation manifests itself only through a little retardation of the hemolysis and does not in any manner lessen the value of the method.

In regard to the explanation of this phenomena, one of us (Fleischmann[14]) has expressed the opinion that we do not prove by this method antibodies against *Spirochæta pallida,* but against metabolic products which appear in a large proportion in the syphilitic organism, and which give rise to the formation of antibodies, but which seem to be present in much less quantity, not giving rise to the building of antibodies, in the normal liver and spleen.

The protocol of an examination with positive results would, therefore, read as follows:

PROTOCOL.

Numbers of the tubes.	Congenital luetic liver extract (0.2 = 1.0 of the attenuation 1:5).	Serum of the tabetic K (0.2 = 1.0 of the attenuation 1:5).	Normal guinea-pig's serum (0.1 = 1.0 of the attenuation 1:10).	Hemolytic amboceptor (0.001 = 1.0 containing double the dissolving dose).	Lamb's blood, 5 per cent.	Result after two hours in incubator and twenty-four hours on ice.
1..	0.2	0.2	0.1	0.001	1.0	No solution.
2..	0.2	0.1	0.1	0.001	1.0	Tr. of solution.
3..	0.2	...	0.1	0.001	1.0	Comp. solution.
4..	...	0.2	0.1	0.001	1.0	Comp. solution.
5..	...	0.1	0.1	0.001	1.0	Comp. solution.
	Congenital luetic extract.	Serum of a non-luetic person.				
6..	0.2	0.2	0.1	0.001	1.0	Comp. solution.
7..	0.2	0.1	0.1	0.001	1.0	Comp. solution.
8..	...	0.2	0.1	0.001	1.0	Comp. solution.
9..	...	0.1	0.1	0.001	1.0	Comp. solution.
	Normal liver extract of newborn.	Serum of the tabetic K.				
10..	0.2	0.2	0.1	0.001	1.0	Comp. solution.
11..	0.2	0.1	0.1	0.001	1.0	Comp. solution.
12..	0.2	...	0.1	0.001	1.0	Comp. solution.
	Normal liver extract of newborn.	Serum of a non-luetic person.				
13..	0.2	0.2	0.1	0.001	1.0	Comp. solution.
14..	0.2	0.1	0.1	0.001	1.0	Comp. solution.
15..	0.2	...	..	....	1.0	No solution.
	Congenital luetic liver extract.					
16..	0.2	...	..	....	1.0	No solution.
17..	...	...	0.1	0.001	1.0	Comp. solution.
18..	...	...	0.1	....	1.0	No solution.
19..	...	0.2 Serum K.	...	0.001	1.0	No solution.
20..	...	0.2	...	0.001	1.0	No solution.
21..	...	...	...	0.001	1.0	No solution.

Tubes were then incubated for 45 minutes at 37° C.

After this exposition of the method we will present the results of our own investigations in the following cases:

A. Cases with Syphilitic Anamnesia, in Whom the Blood Serum or Spinal Fluid Gave a Positive Reaction for Syphilitic Antibodies.

CASE 1.—G., aged 35, slaughterer. Acquired syphilis in 1895. Received treatment at several different times. Last treatment 1902. Examination of the spinal fluid for antibodies negative. Examination of serum for antibodies gave marked positive reaction.

CASE 2.—B., aged 39, waiter. Syphilis at 18 years; received eight inunctions following his infection; at 26 years had large ulcer on hip and back. Inunction cure. Present diagnosis: Liver cirrhosis. Examination of serum gave positive result.

CASE 3.—B., aged 44, tailor. Syphilis in 1894. Injection cure at that time. Apoplexy in 1902. Injection cure. Improvement. Present diagnosis: Cerebrospinal syphilis. Inunction treatment from March to June of this year. Serum gave slight positive reaction.

CASE 4.—S., aged 42, carpenter. Syphilis acquired 20 years ago. Following infection received potassium iodid; thereafter untreated. Present diagnosis: Tabes. Serum gave slight positive reaction.

CASE 5.—G. N., aged 34, barber. Syphilitic infection in 1894. First half-year treated continuously. Thereafter free from symptoms, and untreated. Syphilitic manifestations present. Reaction, markedly positive.

CASE 6.—A. W., aged 21, laborer. Syphilis acquired October, 1906, had inunction and injection treatment after infection When seen single papule on skin of abdomen. Reaction, slightly positive.

CASE 7.—G. K., aged 43. Syphilis in 1897. Two injection and inunction cures following the infection. Diagnosis: Tabes. Inunction cure started June 5. Serum test made June 19. Marked positive reaction.

CASE 8.—U., aged 42, widow. Syphilis 18 years ago. Inunction cure at time for two or three weeks. In 1900 potassium iodid. In 1903 apoplectic seizure. Diagnosis: Tabes Treated from February, 1907, to May with inunctions and injections. June 25, serum gave marked positive reaction.

CASE 9.—M., aged 49, leather worker. Syphilis in 1878; one injection cure following. Free from symptoms thereafter Diagnosis: Arteriosclerosis and myocarditis, with stasis June 26, serum gave slight positive reaction.

CASE 10.—C. W., aged 29, artist. Syphilis 1899; eight injections following infection. June 17, 1907; hemiplegia Spinal fluid, marked positive reaction.

CASE 11.—T., aged 33. Syphilis in 1899. Well treated Status: Enlarged inguinal glands; otherwise free from symptoms since 1901. Serum, slight positive reaction.

CASE 12.—L., aged 26, musician. Syphilis 1902. Cure in Charité followed and several cures thereafter. Last cure completed fourteen days previously. Complained of headache; otherwise free from symptoms. Serum, marked positive reaction.

CASE 13.—K., aged 53, merchant. Lues at 23 years. Inunction cure. Fifteen years later, ulcer. Diagnosis: Tabes Serum, very marked positive reaction.

CASE 14.—D., agd 57, brewer. Acquired syphilis in 1882. Hemiplegia 1886. Second apoplexy in 1904. Diagnosis: Arteriosclerosis with cerebral softening. Serum; slight positive reaction.

CASE 15.—P. K., male, aged 26. Infection six years ago Well treated. Neurasthenic symptoms. Serum reaction slightly positive.

CASE 16.—H. L., male, aged 30. Had chancre on lip five and one-half years ago. No treatment for a considerable time Reaction marked.

CASE 17.—W. S., male. One week following Easter, 1907, had hard chancre. Untreated. Said not to have any symptoms when seen. Reaction, marked.

CASE 18.—J. G., aged 39, merchant. Last treatment year and a half ago. Had in all eight or nine cures and, with one exception, when he received injections, always was treated by inunctions. Reaction, moderate.

CASE 19.—W. G., male. May 6, 1906, hard chancre. Two thorough inunction cures, each consisting of 30 rubbings of 3 grams each. When seen had mucous patches on tongue and in mouth. In treatment recently started had had twenty inunctions and had taken internally twelve bottles of a potassium iodid solution. Reaction, marked.

CASE 20.—O. H. G., clothing cutter. Syphilis in 1902 Treated at this time. Had just completed an inunction cure when seen. Reaction, marked.

14. Verhandl. d. Ver. f. Inn. Med., June 3, 1907.

CASE 21.—K. K., aged 39, woodworker. End of January, 1907, had chancre. In March inunction cure (twenty-two rubbings). During three weeks of April treated internally with pills; thereafter potassium iodid. When seen, inguinal glands of left side swollen. Reaction, slight.

CASE 22.—L. K., aged 27, merchant. September 18, 1906, chancre. Had two inunction cures (consisting of thirty rubbings of 3 grams each). When seen, cervical gland swelling; angina, the latter apparently unassociated with specific infection. Reaction, very slight.

CASE 23.—K. S., aged 21, woodworker. One year ago chancre durum. From May 16, 1907, to June 18, inunction cure thirty rubbings). Status: Alopecia; papules on neck. Reaction, marked.

CASE 24.—H. H., aged 32, farm hand. Ten years ago ulcer on penis. Jan. 17, 1907, fissure ani. Never treated for lues. Mucous patches on margins of tongue. Reaction, very marked.

CASE 25.—W. V., aged 25, photographer. February, 1907, chancre. Manifestations: Alopecia and adenopathy. Had had thirty inunctions. Reaction, slight.

CASE 26.—W. F., aged 25, laborer. Had chancre in 1901. Noticed three weeks ago papule on tongue. Inunction cure recently started, when seen. Reaction, marked.

CASE 27.—M., aged 37, housewife. Diagnosis: Tabes. Reaction, marked.

CASE 28.—F. M., aged 27, tinsmith. Chancre November, 1905. First cure in December, 1905. In all five inunction cures. The last was finished at Christmas. Recent manifestations. Reaction, marked.

CASE 29.—O. K., male. Syphilis twelve years ago. No treatment. Present status: Liver enlarged. Gastric symptoms. Lost greatly in weight in past six months. Reaction, marked.

B. Cases with a Syphilitic Anamnesia that Gave a Negative Result.

CASE 30.—X., aged 32, gold worker. Syphilis in 1895. Well treated. In past two years sixty steam baths. Last cure in 1907. Status: Free from specific symptoms or manifestations; neurasthenic. Serum reaction negative.

CASE 31.—W. M., male, aged 37. Lues in 1893. Had two courses of treatment with hydrargyri salycilicum. In 1905 endarteritis obliterans, with speech disturbance. Treated with inunctions and injections. Diagnosis: Tabes incipiens.

CASE 32.—E. L., aged 25, wife of H. L. (Case No. 16). Primary lesion on lip. Inunction cure just finished.

CASE 33.—A. R., aged 21, carpenter. October, 1906, had hard chancre. Treated since January. Cure just completed when seen.

CASE 34.—O. L., cabinet maker. Acquired lues two years previously. Not thoroughly treated at time. Last year one inunction cure and one injection cure. Was taking potassium iodid when seen.

CASE 35.—H. A., aged 20, carpenter. About nine months previously had chancre. Treated in Charité, received 20 injections. In past four weeks had been treated by inunction (already had had 20 rubbings).

CASE 36.—G. B., aged 22, leather worker. In March, 1907, had ulcer on penis. Adenopathy. No other manifestations. Being treated, when seen, by inunctions, having had 15 of 5 grams each.

CASE 37.—G. B., aged 24, laborer. Feb. 20, 1907, had chancre. Alopecia. Treated by inunctions; had had 50 rubbings.

CASE 38.—Z., 38, painter. Lues in 1878. Cure, 1904. June 18 to 26 inunction cure. Diagnosis: Tabes. Serum examination June 28, negative.

C. Cases with a Negative Anamnesia as to Syphilis, in Whom the Reaction for Syphilitic Antibodies was Found Positive.

CASE 39.—P., aged 43, housework. No knowledge of syphilitic infection. Diagnosis: Aortic aneurysm, dating back four years. Marked positive reaction.

CASE 40.—M. B., male, aged 45. No knowledge of infection. Three weeks previously an eruption appeared on body which was diagnosed as luetic. Reaction very marked.

CASE 41.—W. K., aged 23, office clerk. No recollection of chancre. For 14 days previously, eruption; also noticed couple of small papules on anterior part of penis. Untreated. Doubt as to cause of eruption exists. Reaction, marked.

D. Uncertain Anamnesia with Negative Results.

CASE 42.—B., aged 32, mechanic. Four years previously had what his physician termed inflammation of the prepuce. For past six weeks pain and burning on the tongue. Never treated. Sent for diagnosis.

CASE 43.—K., aged 46, housewife. Several abortions. Diagnosis: Mitral stenosis; tabes dorsalis. Treated for long time with potassium iodid. Serum reaction negative.

CASE 44.—A. K., aged 53, housewife. Therapy: Potassium iodid. Diagnosis: Taboparalytic. Spinal fluid, reaction negative.

CASE 45.—M. M., aged 33, housewife. History of five abortions and two births. In March, 1907, inunction cure. Diagnosis: Tabes. Spinal fluid gave negative reaction.

E. Control Cases.

CASE 46.—Sepsis. Spinal fluid negative.

CASE 47.—Commotio cerebri. Spinal fluid negative.

CASE 48.—Myelitis. Serum reaction negative.

CASE 49.—Tuberculous meningitis. Serum reaction negative.

CASE 50.—Arteriosclerosis (80 years old). Serum reaction negative.

CASE 51.—Pulmonary tuberculosis with amyloid. Serum reaction negative.

CASE 52.—Appendicitis. Serum reaction negative.

CASE 53.—Cerebral tumor. Serum reaction negative.

CASE 54.—Pneumonia. Serum reaction negative.

In entering into a discussion of the above cases we will consider them in the order above employed, taking up, however, *Class A* and *Class B* together.

Class A and *Class B.*—Of the thirty-eight cases with syphilitic anamnesia twenty-nine gave a positive reaction. The remaining nine cases (*Class B*) with luetic anamnesia gave a negative reaction. Inquiry into the history of these revealed that all had been either recently treated or under treatment at time of examination. Also the cases that gave a slight reaction had either lately undergone a cure or were being treated (note Cases 21, 22 and 25). At least two of the latter show specific manifestations at present.

On the other hand the most marked reaction was found in those cases that were either untreated or had not been well treated (note Case 24). In no instance did we examine a case with syphilitic manifestations that gave a negative result (except cases of tabes; see later). These results would suggest that the presence and strength of antibodies are influenced in a high degree by treatment and undoubtedly by the intensity of the infection and reaction of the individual. We are in this first mentioned observation and in its significance in full accord with Citron.[9]

Class C.—These cases are likewise of great interest and importance because the patients did not have any knowledge of previous syphilitic infection. The diagnosis of the etiologic relation of the diseases could only be decided by the sero-diagnosis (note Cases 39, aneurism; and 40 and 41, skin eruptions).

Class D.—Of no less importance appear the cases in whom, with a questionable anamnesia, the reaction proved negative. Note Case 42, in whom, with a questionable anamnese and no previous treatment, the reaction proved negative. The other cases of this class are tabetics, in two of whom we examined the lumbar fluid and in the other the serum. If we consider all cases of tabes examined by us we had out of ten cases five positive (all serum reactions) and five negative results (three with the serum, 2 with spinal fluid). It has been the experience of other observers that while in some

instances the spinal fluid may prove negative, the serum may prove positive.

The results obtained in tabes do not, however, seem quite uniform in that Schutze[5] found antibodies in the lumbar fluid in eight out of ten cases examined. On the other hand, Citron had positive results chiefly with the serum and not with the spinal fluid; Levaditi found a positive reaction in the spinal fluid of two out of four cases.

We might mention that while symptoms of tabes, of course, on account of irreparable changes persist, the antibodies may as result of antiluetic treatment or other causes disappear. Much more uniform are the results obtained by authors in progressive dementia, with which, however, we have no experience.

Control Cases.—These cases, in whom the history and findings were absolutely negative as to specific infection, proved in every instance negative.

CONCLUSIONS.

If from our present examinations any conclusions are allowable it appears to us that the value of the reaction as a diagnostic measure is incontestable. A sure conclusion from a positive reaction seems certain. This is especially valuable in diseases in which the determination of their etiologic relation to syphilis is in question, and in which, if certain, so much depends on prompt antiluetic treatment.

Less definite conclusions can at present be deduced from the serum reaction as to other factors of the syphilis question, to-wit, contagiousness, indications for treatment and judgment of cure. It is self-evident that any statement as to the contagiousness of syphilis during the absence of the antibodies could hardly be made.

We do not think we would err in saying that the demonstration of antibodies in syphilitics is a tenable indication for treatment, as we must look on the presence of antibodies as evidence that the syphilis is still active. On the other hand, we have not the means of determining at present how far we can use the disappearance of antibodies in judging a cure.

It is true that during the course of, or following, treatment we may find either none at all or only a slight reaction, but we have not yet been able to follow the subsequent course of such cases. As to whether antibodies later appear, or their continued failure assures a cure, it is evident that this question could only be solved by the observation of a large number of cases over a long period.

We are aware that our investigations are too incomplete to admit of definite conclusions in every direction, but it appears to us that the importance of the subject has not up to this time been sufficiently appreciated, and can only be treated in a satisfactory manner by numerous and widespread workers in this field. This has been the chief incentive at this time for the publication of our examinations, hoping that they may stimulate others to similar investigations.

In conclusion we wish to extend our hearty thanks to Dr. Max Joseph of Berlin, who has been kind enough to place at our disposal his large polyclinic material.

The Outdoor Conscience.—Life in the open air, looked at from afar, is surrounded by as many terrors as the stairs of our childhood at night. Familiarity soon dispels these imaginary fears and in a short while we can not bear the close, stuffy rooms of our houses. We quickly acquire a fresh-air hunger that nothing else can satisfy. The fresh-air conscience is then awakened and the most important factor in the recovery of health has become a habit.—*Journal of the Outdoor Life.*

Special Article

TRAVEL NOTES FROM SOUTH AMERICA.

NICHOLAS SENN, M.D.

CHICAGO.

I. BRAZIL AND BAHIA.

INTRODUCTION—THE TWIN CONTINENTS OF AMERICA.

As an American and one who has seen much of the world, it has always seemed strange to me that the people of the twin continents of America know so little about each other. It is safe to make the statement that the average North American is more familiar with all the countries of Europe, Egypt, India and the Holy Land, than he is with his next-door neighbors, the sister republics of South America. North and South America are still parts of the same continent and will remain so until the connecting link is severed by the construction of the Panama Canal, when each twin will become a separate continent.

In glancing over the early history of the New World it becomes clear why the two continents have failed in cultivating closer relationships in commercial and educational affairs, and remain comparative strangers to each other. The estrangement came with the beginning of immigration to this continent. Soon after the discovery of America by Columbus the daring and adventurous Portuguese and Spanish explorers followed the coast of America southward, where they found the rich tropical vegetation, the climate congenial to them, and the prospects for finding gold and other treasures more promising than if they had turned their attention in the opposite direction. The glowing accounts which these early explorers brought to their respective countries insured an early and numerous immigration from Portugal and Spain, the former establishing settlements on the east, the latter on the west coast of South America, where their descendants remain until this day. These immigrants naturally kept in close touch with their mother countries, which at that time were mistresses of the sea. They adopted European architecture, continued to read the literature of their native tongues and remained true to their ancient customs and habits. Latin South America is to-day the prototype of Portugal and Spain.

On the other hand, North America attracted immigration from England, Scotland, Ireland, Germany, Holland and Scandinavia, and was settled by people who came not in search of fabulous treasures but to find new homes where they could cultivate the soil. Forests had to be cleared away, the great prairies had to be brought under cultivation, new waterways had to be established, great railway systems had to be constructed to bring within easy reach of access the remote parts of the country. All this meant hard and persevering work, but it procured a rapidly increasing population bent on speedy development of the vast and varied resources of the new country. Money and labor had to be borrowed from the mother countries to bring into existence our vast industrial enterprices.

The amalgamation of the different nationalities resulted in the formation of a new nation characteristic of the United States, a nation which established its own habits and customs, a nation noted for its energy and spirit of enterprise. Foreign customs and habits were soon cast off and a people has grown up with common interests and a common language.

The Church of Rome, so powerful an institution in all of the South American republics, has had very little influence in molding our political and social life and in controlling our educational institutions. Under the influence of religious liberty, our schools of all grades, public and private, have flourished and have reached a degree of perfection which many nations counting their age by centuries have failed to attain. Foreign languages are soon lost in the United States and are gladly exchanged for English, the common language, while the Portuguese and Spanish languages have obtained permanent footholds on the South American continent. During colonial

times and when our nation was young and busily engaged in developing the varied resources of the country, we borrowed our literature not from any one country but from all countries whose immigrants came here to establish new homes. So in the course of time there has grown up a literature distinctly American, a rich literature the work of American authors. We have our own text-books written by American authors and specially adapted for the needs of our schools of all grades. The time is now opportune to cultivate closer affiliations with our sister republics in South America personally, commercially and in all matters pertaining to education.

I am sure the time is now at hand when it will be of mutual benefit to bring the members of the medical profession of both continents in closer touch. The Pan-American Medical Congress has not yielded the expected results. The last meeting, held in the city of Panama, from the point of attendance at least, was a complete failure. The only way to reach our South American colleagues and interest them in mutual scientific work and in the exchange of clinical observations and experiences is by cultivating their personal acquaintance, by visiting their medical schools, their clinics and their hospitals. Instead of making their customary visits to the old institutions of learning in Europe, let the American physicians visit more and more the medical men and medical institutions of the South American republics, and I am confident that the personal acquaintances made will be an inducement to our colleagues on the other side of the equator to become more familiar with our medical institutions and with the practice of our physicians and surgeons.

With the intention of becoming more familiar with medical affairs in the South American republics and with a desire to become acquainted personally with their leading medical men, I decided to spend my summer vacation this year in circumnavigating the South American continent and making excursions from different points into its interior. The tour will give me an opportunity to visit all the large cities at and near the east and west coasts and the inland trip from Mollendo, Peru, on the west coast, will bring me on the highest point of the great range of the Andes Mountains and to the interesting city of La Paz, the capital of Bolivia. My observations commenced with the city of Bahia.

BAHIA.

I left New York in company with Dr. Louis Livingston Seaman of New York City, on the Lamport and Holt S. S. *Byron* July 3, and landed at Bahia, Friday morning, July 20. The voyage was uneventful, but the heat in the cabins at times was very oppressive. Bahia is the oldest city in South America, the Bay of All Saints, on which it is located, having been discovered by Amerigo Vespucci in 1503. The present site of the city was chosen as the first settlement of the Portuguese in 1513. Bahia became the capital of Brazil in 1549 and remained as such until 1763, when the seat of government was removed to Rio de Janeiro. It holds its position as the stronghold of the Roman Catholic Church, as the archbishop of Bahia is the primate of Brazil. As a commercial city it antedates Rio de Janeiro, and has retained its share of the commerce with foreign nations, as its harbor is second only to that of the former, among Brazilian cities. Its present population is 225,000, the negro contingent being the largest. Negro slaves were first brought from Africa to the east coast of South America to cultivate the sugar plantations. Slavery was gradually restricted and was completely abolished in 1888. The negro has found in this part of Brazil a congenial climate, and political and social conditions most favorable to his happiness and prosperity. He has multiplied and flourished here like the most aggressive and persistent weeds of our fields and meadows. Many of the former slaves are now occupying important public positions, and there is nothing in the way of a negro attaining the highest rank in the army. His social position is on a level with that of the white man, and he enjoys the same privileges. He is an important element in the political affairs of the republic and his influence is eagerly sought by those who aspire to political honors. The native Indians have disappeared in this part of Brazil. I saw only a few men and women whose jet black straight hair and prominent malar eminences betrayed their aboriginal descent. The half-castes, the issue of amalgamation between Portuguese, natives and negroes, form a large part of the population of Bahia, while the pure blood Europeans are in the minority.

The city of Bahia has a beautiful location, occupying the narrow strip of low land in the form of a crescent, following the shore of the bay and the rugged bluffs behind it. The perennial verdure is strongly suggestive of its tropical location and the constant moisture from the heavy rains and vapors of the sea. For years Bahia was the hotbed of yellow fever and dreaded as such. The sanitary improvements which a more stable and enlightened government has inaugurated and enforced for a number of years have succeeded in removing this scourge and have made of Bahia a healthful city. The city is typical of all South American cities, in architecture, streets, sidewalks, parks, etc., all modeled after those of the mother country. Electric and mule tramways intersect the city in all directions, reducing the necessity of walking to a minimum. A complete system of sewerage and an abundant supply of pure drinking water have done much toward eradicating the diseases due to water pollution. The poor people obtain their drinking water from flowing wells which are to be found in different parts of the city. Water vendors obtain their supply from these wells and dispense it in small kegs, four of which the little darkies can carry, and for which the consumer pays a small sum, just enough for the seller to gain a meager day's wages. Public buildings and private residences are supplied with pure water by a private company. The general aspect of all the people of Bahia is one of contentment and moderate prosperity. The lower classes of the people are fairly well dressed and street begging is almost unknown. The men are below the average size, thin and wiry, while many of the women, especially the negresses, become very fat before they reach middle life. I saw very few cases of kyphosis or lameness, and no scarred necks, nor enlarged cervical glands, all of which would suggest that tuberculosis is not common. The ravages of tertiary syphilis are not infrequently seen, especially among the negroes.

THE MEDICAL SCHOOL.

The Medical School of Bahia is an old institution and one which enjoys a national reputation, as it draws many of its students from Rio de Janeiro, the much larger and capital city of the republic. It is the medical department of the ancient University of Bahia. It has an excellent location in the center of the city, facing the same public park as the cathedral. Recently it lost a number of its buildings by fire. All of these are now being rebuilt in more modern style and are nearing completion. The teaching is now confined to the main building, a large, square two-story building with numerous large windows, insuring an abundance of light for all the wide hallways and lecture rooms. For the visitor a very interesting feature of this building is the faculty room, the walls of which are covered with portraits in oil of the most distinguished professors of the past, all in academic dress. The hall for public lectures and exercises is large and exquisitely furnished. In the anatomy room I found three cadavers on marble slabs in process of dissection; although the weather was very warm the atmosphere was absolutely free from any offensive smell. All the lecture rooms are practically in the open air when all the large windows are opened. The present number of students is 500, including five women. The students are obliged to attend five years before they can come up for final examinations. The laboratory facilities are not what they should be, but this defect will undoubtedly be remedied after the completion of the new buildings.

THE MISERICORDIA CHARITY HOSPITAL.

Bahia has three hospitals, of which two, the Military Hospital and the Portuguese Hospital, are small. The Misericordia can accommodate 300 patients, all in large wards, as this hospital makes no special provision for private patients. The hospital is in charge of the Sisters of Charity of St. Vincent de Paul, twenty-five in number, and all French. The hospital is a large, square snow-white building, two stories high, in the center of grounds enclosed by a high wall surmounted by an iron

picket fence, which gives the hospital the appearance rather of a prison than of a home for the sick. The hospital is divided into two equal parts by a court. One side is occupied by male, the other by female, patients. Each part has again its own open square decorated with shrubs and flowers. A broad hallway runs all around this court on both floors, where patients can enjoy the outside air and from which the different wards open. The wards are very large and high. The low, narrow iron cots are supplied with bedding adapted to the warm climate, as Bahia is one of the hottest places in Brazil. The hospital has no trained nurses, and the twenty-five sisters are assisted in their ward work by male helpers who have received no previous training. The medical and surgical attendance is furnished by the faculty of the medical college, and the internes are selected from the senior class. A surgical clinic is given every day, at which from two to three operations are performed. The new operating amphitheater is an exact copy of one I saw in Lisbon. The students are separated from it by a glass partition, and every window is sealed with one pane of glass, the object of this uncommon architecture of the operating room being to exclude the germ-laden atmosphere. The operating room is supplied with all appliances for aseptic work. Spinal anesthesia is being practiced on a large scale and seems to have found favor with the profession here, evidently in consequence of recent visits of members of the faculty to the surgical clinics of Paris. The Maternity Hospital is on the opposite side of the street from the Misericordia Hospital. It is a modern one-story building which furnishes ample obstetric material for clinical instruction in the art and science of this very important branch of medicine.

BAHIA, BRAZIL, July 19, 1907.

(To be continued.)

Clinical Notes

A SPORADIC CASE DIAGNOSED AS PELLAGRA.

T. C. MERRILL, M.D.
COLORADO, TEXAS.

In connection with the report of a series of troublesome and indeterminate cases recently observed and studied at the Alabama Hospital for (colored) Insane, the following account may be of interest:

History.—Male, aged 42. Family history, except for the occurrence of epilepsy in a sister, was negative. Patient's history, prior to his present condition, was one of good health. He was first seen on July 4, 1907, and stated that he had been ill with a sore mouth for two or three weeks. He had been employing various mouth-washes without relief and there had been a progressive increase in bodily prostration. Aid had been summoned to his home at this time on account of his weakness and inability to travel from his dwelling to town. He complained of seeing spots before his eyes, was dizzy and had nausea without vomiting. Bowel movements were regular, feces varying in color from dark to light. Headache and backache were absent. There were no especial urinary symptoms and neither hemorrhages nor swelling, cuticular or otherwise. There had been a steady loss of weight, with a concomitant decrease in strength.

Examination.—The patient was noticeably emaciated and weak. Temperature 99 F., pulse 100. The pharynx, throat, mouth and tongue were dark red in color and very sore. The tongue was swollen and blisters of a herpetic character made the lips very uncomfortable. Salivation was marked, but the teeth were not loosened, and there was no sponginess, softening nor bleeding of the gums. There was a slight cough, and friction and moist râles, with bronchial breathing, over both sides of chest, anteriorly, without significant expectoration.

The backs of both hands and of the phalanges were deeply pigmented from the radio-carpal articulation to the fingernails. The color was dark brownish red and even purplish and was accompanied by a thickening and scaling of the epidermis, which had a dry and glabrous surface when the outer layers separated. There was some itching, which incited the patient to assist in this separation. Palmar surfaces, feet and the remainder of the skin surface were unaffected. Cardiac and urinary examinations were negative. No examination of the blood was made. In addition to the oral condition and the pigmentation, the prostration was a third and very striking characteristic, and out of all proportion to any cause apparent at the time.

Treatment.—Cardiac, renal, and syphilitic disease, diabetes, and scurvy being eliminated from the diagnosis, the disease seemed to be that of some obscure intoxication, and the patient was placed under eliminative and tonic treatment. At about this time I noticed in THE JOURNAL the paper referring to the Alabama outbreak and the similarity of this case to those described attracted my attention. Some corn-meal which had been rather prominent in the patient's diet was referred to the Laboratory of Plant Pathology at Washington. The pathologist's report stated that the corn-meal was unfit for a regular diet, being "unquestionably in bad condition and too rancid to eat, at least for a regular diet." On the strength of this report a provisional diagnosis of pellagra or grain poisoning has been made. A point counting to some extent against it is the fact that the patient's wife and two children are in very good health, although they have been more or less devoted to corn-bread made of the suspected meal. Under the treatment mentioned, together with removal of the meal from the diet, the patient has steadily improved and is now almost well. The sore mouth and pigmentation have disappeared, the weight has been largely regained and the bodily activity has been restored to the extent of allowing a two hundred mile camping trip in a wagon.

Whether or not the condition thus described can be properly called pellagra, possibly those who can speak more authoritatively than I can say. The pathologist remarks that in these cases "the definite toxic substances that are in the corn-meal have not been determined as far as I know, so that any rancid meal is suspicious." I wish to thank him here for his cordial assistance, and I hope that the publication of this case will be followed by that of others, following the lead of the Alabama series.

MAGNESIUM SULPHATE SUCCESSFUL IN TWO CASES OF TETANUS.

HORACE GREELEY, M.D.
BROOKLYN.

CASE 1.—*History.*—R., a healthy boy, aged 2 years, residing with his parents on Court street, Brooklyn, stepped on an old garden rake and lacerated the web between the great and the adjoining toe of the left foot. Healing progressed under home treatment and the wound was completely closed by the tenth day, when the child was seized, in the morning, by a severe muscular spasm involving, I deduced from hearsay evidence, the muscles of the throat, face, neck and even extending down the trunk and legs. I was sent for, but, being unable to attend at once deputized a friend, who, not being told about the injury, surmised that gastrointestinal troubles were responsible and administered a dose of calomel.

In the afternoon of July 16, 1907, when I called, I was informed that the mother had taken the patient out for an airing, as the severe spasms seemed to have modified, so returning in an hour I found that while out repeated spasms had compelled her to take the child into a convenient clinic, where she was induced to place him immediately in the hospital. Here tetanus was diagnosed, 1,500 units of tetanus antitoxin and two grains of chloral and ten of bromid given, but the case was adjudged to be hopeless, as I was told.

As the father had been informed that the child would undoubtedly die he decided to bring it home, and did so at once. Examination disclosed tonic contractions of the jaw muscles, those of the neck and back and inability to swallow anything but a little water and that with great difficulty, and crying, which latter increased the tetanic contractions above, and extended them below, to the legs. Sweating was profuse, and the pulse rapid but strong. Temperature 102 F.

Treatment.—I gave the patient 6,000 units more of antitoxin, and ten grains of chloral, with fifteen grains of potassium bromid by mouth, and left instructions to repeat the bromid in milk every two hours and to give a diet of milk and water only. The next morning he was about the same, only that in addition slight contractions were persistent in the extensor muscles of the legs, sweating was more profuse, and the bladder and bowels had not emptied themselves. I now administered a saline enema, which remedied the last two conditions, and owing to the patient s increased difficulty in swallowing, gave orders that the bromid was to be given every hour per rectum. The dose of antitoxin also was repeated.

The afternoon found patient worse, crying continually, with difficult breathing and at times becoming cyanosed. Opisthotonos was marked and the facial muscles typically contracted.

I gave one-twentieth of a grain of apomorphin hypodermatically, which, although it made the child vomit once, markedly relaxed the spasms and exercised its good action for twelve hours, when it was repeated, but with diminished effect, so that on the third day of the onset I felt that I must turn to morphin as the sole remaining remedy, and one-eighth of a grain was given immediately, with quieting effect. In the afternoon I found the child even worse, crying, struggling for breath, and head and legs in constant more or less rigid extension, so I determined to at least make another attempt (having acquiesced in the accepted opinion that regards tetanus antitoxin as practically valueless except as a prophylactic), and so gave by hypodermoclysis (under skin of abdomen) one pint of distilled water containing two drams of magnesium sulphate in solution. Almost an hour was consumed in the injection, but within thirty minutes thereafter a marked amelioration of all symptoms was evidenced, and continued till within an hour the child fell asleep, with nearly a total relaxation of the affected muscles. Cyanosis disappeared, and even the jaws were loosened, while the pulse, which had become rapid and feeble before the operation, returned to an almost normal condition. Patient perspired most profusely and his urine increased in amount and was passed on the bedding, staining it, the attendant said, yellow.

Improvement was continued the next day, but the day after that, noticing that the muscular contractions were returning, I repeated the procedure, with a like result, patient's condition improving still further, but no tendency to relapse appeared, and recovery was complete thenceforth. Temperature, however, fell only to 101 F., gradually subsiding to normal, which it reached at the end of five days. Control of muscles used in walking seemed to be imperfect, as the gait was irregular for some days.

CASE 2.—*History.*—This was one of chronic tetanus, coming on in August of this year, four weeks after a Fourth of July accident to a longshoreman of about 45, whose hand had been badly injured by a cannon cracker, he said. He complained of stiffness in neck, inability to open his mouth properly or to swallow solid food, at night a difficulty in breathing, and excessive perspiration, which sensations had troubled him for over a week. Examination confirmed these symptoms and found a temperature of 100 F.

Treatment.—Patient received an injection, in the abdomen, of a solution of three drams of magnesium sulphate in a pint of water, and was given instructions to take one dram of the same salt three times a day, in water, by the mouth. All symptoms disappeared within twelve hours and did not return.

If the good result of these cases is attributed, and it seems only reasonable to do so, to the hypodermoclysis operations, how was it accomplished? Was it only owing to a dilution of the poisons till they no longer were able to act on the nervous system and to an increase in their elimination, to a neutralizing action of the magnesium sulphate on the toxins of the tetanus bacillus, or to its antagonizing effect on the nerve centers, or what? If the first, then why should not the measure be of great value generally in such diseases as scarlatina, variola, typhoid or in any infectious condition whatever? At least I think it may be successfully employed in tetanus of even the gravest form.

TWO CASES OF ACUTE DILATATION OF THE STOMACH FOLLOWING ABDOMINAL OPERATION.

STAFFORD B. SMITH, M.D.
GOLDFIELD, NEV.

CASE 1.—Miss A., aged 28, entered the hospital with a diagnosis of acute appendicitis. The abdomen was opened and an apparently normal appendix was removed. The wound was sealed. Till the tenth day the patient did well, but had very little appetite and was constipated; temperature normal.

Postoperative History.—On the eleventh day following the operation the patient felt some distress in the epigastrium, vomited copiously and was much relieved. Later in the day, I was notified that she was pulseless. A few minutes later, I counted the pulse in the carotid and found it 200. The patient was breathing a little hard and complained of slight abdominal pain. I looked at the wound and found it in excellent condition. The abdomen, however, was considerably distended and generally tympanitic. Stimulants were given hypodermically and warmth was applied to the cold extremities. While I was at the bedside, the patient again vomited—nearly a quart of brownish-green, watery fluid, and subsequent examination showed the presence of much bile. Fifteen minutes later she died.

Postmortem Examination.—Autopsy showed a dilated stomach of such a size that it occupied nearly all of the abdominal cavity. The intestines, small and large, were collapsed and prolapsed into the pelvis, the duodenal portion turning on itself (in the process of prolapse) below the opening for the common bile duct in such a way as to obliterate its lumen, preventing the bile from flowing downward, and, consequently, causing it to be regurgitated into the stomach.

The diagnosis was not made until autopsy.

CASE 2.—Mrs. B., aged 35, was operated on for appendicitis about six weeks after the patient in Case 1. A congested appendix containing fecal matter was removed and the abdomen was sealed.

Postoperative History.—The patient made an uneventful recovery until the fourteenth day, when the wound, which was apparently healed (the sutures were removed on the eleventh day), spontaneously opened at its upper extremity. It was clean, however. Further examination showed a distended abdomen, generally tympanitic. The bowels had been kept open by enemas and cathartics, but for the last few days poor results had been obtained. The patient suffered little or no pain, but later in the day vomited a large amount of bile-stained fluid. The pulse was growing more rapid and was weaker; the temperature was normal. Careful abdominal palpation revealed a large, smooth mass occupying the upper part of the abdomen and extending below the umbilicus. The abdomen was more tympanitic after the vomiting than before; the fecal color was good. A diagnosis of acute dilatation of the stomach was made.

Treatment.—The patient was turned over on her abdomen and the foot of the bed raised one foot. A high enema was given and small doses of croton oil. Diet was restricted to small quantities of water and milk; stimulants were given.

Results.—In twelve hours she had a good movement of the bowels (the enema being repeated) and the distension of the abdomen was greatly reduced. The next day, or twenty-four hours after treatment, she was entirely free from any abnormal distension—her pulse returned to normal and she made a rapid and uneventful recovery.

The Incision for Goiter.—Martin B. Tinker, in the *American Journal of the Medical Sciences*, states that the incision should be long. He prefers the transverse incision of Kocher, which, with careful closure, leaves little scar, and that located so low that it is easily covered. In order to avoid scars Tinker closes the wound with the finest embroidery needle, using very fine horsehair as a suture material. Such careful closure requires much time, but if local anesthesia is used this, he says, is a matter of little importance.

A CASE OF TUBERCULOSIS INVOLVING THE NOSE WITH DESTRUCTION OF THE DEEPER TISSUES.

JOHN V. SHOEMAKER, M.D., LL.D.
Professor of Materia Medica, Therapeutics, Clinical Medicine and Diseases of the Skin in the Medico-Chirurgical College and Hospital.
PHILADELPHIA.

The following is the report of the patient whom I presented for consideration to the Section on Cutaneous Medicine and Surgery of the American Medical Association at the session held in Atlantic City, June, 1907. The description of the case then given was informal and I now present a detailed history:

Patient.—Mrs. J. C. M., aged 43, housewife; nativity, United States.

Family History.—Mother died of paralysis at the age of 55 years, father of nephritis at the age of 50 years. The family history is negative as regards cancer, tuberculosis, gout and rheumatism.

Previous History.—As a child she had measles, chickenpox, mumps and scarlet fever. Three years ago she had ulceration of the stomach. She denies venereal disease.

Present Illness.—Two years ago she walked against the edge of a door and received a fracture of the nose, which did not unite until one year after the injury, but during this time the nose was in a constant state of inflammation. Six weeks after the fracture united a papule the size of a split pea developed on the left ala of the nose, which on rupturing was rapidly followed by ulceration. The ulceration spread quickly to the left cheek and upper left half of the lip. Later the ulceration further spread over the tip of the nose to the right ala and now involves the entire nose with destruction of the cartilage and deeper tissues.

Physical Signs.—Lungs apparently normal. Heart: A mitral systolic murmur, compensation good. Abdominal viscera normal. Lymphatic glands not enlarged and the skin over the body shows no scars of previous syphilitic infection.

Laboratory Findings.—Urinalysis: Albumin, negative; sugar, negative; indican, slight trace; reaction, acid; specific gravity, 1018; color, amber.

Blood Examination: Hemoglobin, 87 per cent.; leucocytes, 8,000; erythrocytes, 4,273,460.

Microscopic Examination.—A section of the diseased tissue was examined by Dr. L. Napoleon Boston, Philadelphia, with the following results: (1) Superficially the tissue resembled that ordinarily present in cutaneous ulcerations, e. g., consisted of débris and many polymorphonuclear cells. (2) The deeper structures showed some increase in the epithelium, and there were here and there what appeared histologically to be distinct tubercles, with the presence of giant cells. (3) Sections stained for bacillus tuberculosis were positive in but one instance, and but few tubercle bacilli were found, but sufficient, however, to make the diagnosis positive.

The sections of the skin were unusual, says Dr. Boston; a number of skin specialists who had seen this case with me agreed that it is extremely uncommon to find tubercle bacilli in the skin, and one man went so far as to say that he thought they were never found. In view of the frank statements of these workers, I had a specimen sectioned and stained up for tubercle bacilli by Dr. Rosenburg, pathologist and bacteriologist for the Philadelphia City Hospital, one of the best workers in Philadelphia. In proof of my own findings Dr. Rosenburg found bacilli in the skin from this case. I also had another pathologist look at some of the sections, and in fact nearly all the physicians at the Philadelphia City Hospital saw them, as they were unusually good specimens of cutaneous tuberculosis.

The first examination of a section did not reveal the tubercle bacillus, but many polymorphonuclear and giant cells.

Thus, the second examination of the tissue confirms the suspected diagnosis of tuberculosis, which was based on the fact that the lesion showed no tendency to heal, but slowly and steadily increased in size by peripheral extension. The ulcer looks bright red in color, with slightly infiltrated edges, is uneven, granular, and covered with a thin yellowish secretion. At the beginning of the ulceration the spot was very painful, but did not tend to bleed even when touched.

As a rule, patients having tubercular ulcers have pulmonary tuberculosis, whence the infection, which is not the case in this patient. It is possible that she received the infection at the time she met with the accident, because the fracture did not unite for a year, during which time the nose was constantly in a stage of active inflammation.

Treatment.—Her family physician in Atlantic City thought the patient had syphilis and gave her, before she came under my care, a full course of iodids, to which the inflammation did not yield in the least. A thorough course of iodid as well as mercury was also given her again before she came under my observation, but without any good effect. The treatment thus far has been of no avail to stop the destructive action of the ulceration. The following greatly relieved the pain of the ulceration and lessened the thin yellowish discharge.

℞.	Creosoti (beechwood)	m. x	60
	Atropinæ sulphatis	gr. ii	13
	Cocainæ hydrochlorici	gr. v	32
	Aquæ hamamelidis	ʒii	60
	Liquoris calcis	ʒiv	120

M. Sig.: Apply locally on a cloth.

Believing, as I stated at the demonstration that I made at Atlantic City, that I was dealing with a case of ulceration due to tuberculosis, I cauterized the surface with pure phenol (carbolic acid) every three or four days and applied constantly the solution just named. At the same time, as the patient's blood test showed decided deterioration, blood tonics with antiseptics were given daily, together with good food. The food, which is all important in all such cases, as it is in general tuberculosis, consisted of plenty of animal food, such as soft-boiled eggs (not raw eggs). The latter, as I have shown time and again in previous reports, are hard to digest and often so disgust the patients as to have them refuse all kinds of food or to give them bad indigestion. Very often in forced feeding with raw eggs, I have been able to collect the eggs in the fecal discharges of the patients. In addition to eggs, plenty of animal broths, especially of beef juice, and a moderate amount of milk were given. In addition, a few well-cooked vegetables and fruits were permitted. Medicinally, the patient was given small doses of paraldehyd, from one-half to one dram at bedtime in order to obtain sleep. The paraldehyd was mixed with aromatic and wild cherry syrups. The addition of these syrups disguises to a large extent the unpleasant taste of paraldehyd. In nervous patients, suffering as this patient has for weeks from this irritable ulceration of the face, paraldehyd is one of the very best of all hypnotics. It is well borne by the mucous membrane and has no unpleasant action on the heart and circulation. Further, paraldehyd can be given for a great length of time and has no bad after-effects, either at the time of administration or the following day. It is one of the best and most stable hypnotics or sleep-producing agents. Small doses of beechwood creosote were administered, beginning with one drop and increasing to eight and ten drops three times daily in a bitter tonic. Under this treatment, I am happy to add that my patient at once improved, her pallor lessened, the ulceration looked better, her appetite and strength were increased with each succeeding day. When she left the hospital some weeks after the meeting I ordered the following tonic and antiseptic:

℞.	Ferri lactatis	gr. xxx	1.95
	Arsenii trioxidi	gr. i	.06
	Quinin sulphatis	gr. xxx	1.95

M. et ft. pilulæ No. xxx. Sig.: One pill three times a day after meals.

I hope, if the patient will present herself at stated intervals at the hospital, with the local and constitutional treatment given, to heal up and restore the tuberculous ulceration to the state of at least scarred tissue.

1805 Walnut Street.

DISCUSSION.

DR. JOSEPH ZEISLER, Chicago, said that lupus could be excluded in this case from the fact that the bone had been destroyed to a considerable extent. Such destructive bone lesions

are not seen in lupus. Epithelioma and blastomycosis could also be excluded. The medication indicated in such a case is potassium iodid and mercury and mercurial plaster.

DR. R. A. MCDONNELL, New Haven, agreed entirely with Dr. Zeisler as to diagnosis and treatment.

DR. HENRY J. F. WALLHAUSER, Newark, N. J., also agreed with Dr. Zeisler's diagnosis. He asked Dr. Shoemaker if the microscope showed the tubercle bacilli. Both in the disease referred to by Dr. Zeisler and in tuberculosis, the microscope shows plasma and giant cells, so that, unless the tubercle bacillus was found, the histologic findings would not be of any value in the differential diagnosis between the disease mentioned and tuberculosis.

DR. A. RAVOGLI, Cincinnati, said that he saw two cases similar, the result of lupus. One patient had since died; the other is still living. In both the disease began with a small nodule of lupus affecting the auricle of the ear, then extending to the zygomatic arch, involving the temporal and occipital bones, and in the patient who is still living the nerves and blood vessels of the parts have become exposed. A part of the temporal bone had been destroyed. Death is expected.

Dr. Ravogli believes the case shown by Dr. Shoemaker to be one of true tuberculosis, and the microscopic examinations thus far made seem to confirm that diagnosis. Tubercle bacilli affecting the papillary layer or derma remain limited there, and form what is called lupus vulgaris, but when they extend beyond the domain of the derma and affect the subcutaneous tissues, then true tuberculosis exists. Even if in the case presented no tubercle bacilli were found that would not prove that it is not a case of tuberculosis. In the skin it is very difficult to find the tubercle bacilli, even after an examination of hundreds of sections. In these cases, the micro-organism is in spore form, and we are unable to stain it as when it is found in the lungs. He said there seems no doubt that in the case presented the tubercle bacillus is the essential agent, and that it has left the derma and invaded subcutaneous tissues.

DR. JAY F. SCHAMBERG, Philadelphia, said that while one can not be positive beyond doubt as to the nature of the lesion in the patient presented, the condition looks so strongly luetic that nothing but the failure of vigorous doses of mercury and potassium iodid would negative that diagnosis. Potassium iodid alone would not prove an adequate therapeutic test.

DR. J. B. KESSLER, Iowa City, agreed with Dr. Zeisler that vigorous specific treatment should be given a trial in this case. It seemed to be a promising case for the use of injections of either the soluble or insoluble preparations of mercury.

DR. GRANVILLE MAC GOWAN, Los Angeles, Cal., said that if the patient presented came to him for treatment he would not restrict himself to the use of mercury and potassium iodid. The lesion is evidently rapidly destroying the face, and from the appearance and history, it is tuberculous. The statement, frequently made, that the diagnosis of luetic disease can be established or excluded by the use of potassium iodid and mercury is only a half truth. No two other drugs are more valuable than these in the treatment of tuberculosis of the skin, and then it is possible to have tuberculosis engrafted on pre-existing syphilis. He suggested that further sections be taken and submitted to a competent bacteriologist, and if the bacilli are found, or the microscopic picture is characteristic of tuberculosis, surgical means should be resorted to. This would include a thorough curettage of the bones, and the removal, as completely as possible, of all the diseased tissues. After this a 50 per cent. solution of chlorid of zinc should be applied, at the same time giving intradermic injections of the soluble salts of mercury, with potassium iodid internally. The case seemed to him a surgical one.

DR. R. W. TAYLOR, New York City, said that there might be a syphilitic basis to the lesion, and he would be disposed to try Zippmann's decoction.

DR. J. V. SHOEMAKER, Philadelphia, said that he saw the patient in this case only two or three times while she was in the hospital, and did not see her again until he presented her to the Section. Her physician had informed him that she had been under all forms of anti-syphilitic treatment, and that it had had no effect on the course of the disease. When the patient came to the hospital she had a good deal of pain, which may have been due to the exuberant granulations or the disease itself; at all events, it was very severe, and the only internal remedy that allowed her to sleep was paraldehyd, in one or two dram doses. Dr. Shoemaker was led to believe, by the result of the pathologic findings, that the necrosis and changes in the tissues were of a tuberculous character.

ABDOMINAL PREGNANCY.

JOHN C. MURPHY, M.D.
Professor of Obstetrics, College of Physicians and Surgeons.
ST. LOUIS.

Patient.—Mrs. J. S., aged 28, was seen June 2, 1907, and the following history obtained:

History.—Married in 1903, always enjoyed perfect health. No history of pelvic disease. Menstruation regular until July, 1906, when menstruation ceased. Soon the usual symptoms of pregnancy appeared. Fetal movements were manifest in December, continuing till April, 1907. About April 14, pains simulating normal labor occurred, followed by a bloody and vaginal discharge. Her physician told her the normal period for labor had not arrived and gave sufficient morphin to stop the pains. From this time all fetal activity ceased and the general health of the patient became bad. May 21 three physicians in consultation decided that the woman was not pregnant (despite her insistence to the contrary), but was suffering from abdominal dropsy, and arrangements were made to tap the abdomen the following day. This operation the patient declined. When I saw her on the date mentioned her abdomen was enormously distended, pulse 140, temperature 103 F., respiration 44. The picture suggested infected ovarian cyst, but the history pointed to pregnancy.

Operation.—After removal to the hospital examination showed the uterus to be empty and not over four inches deep. On palpation a mass could be felt on the left side of the abdomen. A diagnosis of abdominal pregnancy was verified by operation the following day. A medium incision was made down to the gestation sac, which was closely adherent to the parietal peritoneum. The next cut opened the sac from which gushed a huge quantity of stinking amniotic fluid, doubtless infected by the colon bacillus. The incision was enlarged and a badly decomposed but mature male child weighing nine pounds extracted, which from the history must have been dead for about seven weeks. The gestation sac was flushed with physiologic salt solution, mopped dry and loosely packed with sterile gauze. For fear of hemorrhage and the danger of opening the general cavity no attempt was made to remove the placenta which was attached to the abdominal wall and apparently to the under surface of the liver.

Postoperative History.—On the day following operation the condition of patient was much improved—temperature 100 F., pulse 108. Every second day the sac was cleaned with gauze and repacked. On June 16 placenta was found to be detached and was readily extracted without hemorrhage. Sac now collapsed and healed rapidly. Bowels moved freely by the use of salines. By July 1 obliteration of sac and closure of wound was complete, pulse and temperature normal, Considering the patient safe, I left the city for a few days, and was amazed to find on my return, July 5, that complete intestinal obstruction had occurred. Non-surgical measures proving ineffectual, I reopened the abdomen, but on account of patient's condition did not persist in effort to locate obstruction, but brought up a loop of colon which was stitched into wound and opened; considerable fecal matter escaped. Patient was returned to bed in bad shape and died at midnight.

It is impossible to say whether this case could be classified as a primary abdominal pregnancy. The absence of previous pelvic disease and the location of the placenta suggests the probability of that rare condition. The uterus, tubes and ovaries could be felt outside the sac, but did not participate in its formation. If the condition had been recognized in time the life of the fetus could doubtless have been saved, as it was alive at full term.

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[*For other information see second page following reading matter.*]

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MEDICAL COLLEGES AND STATE PRACTICE ACTS.

Undoubtedly there is a steady advancement in the standards of medical education in the United States. Whereas a year ago only seven medical colleges were requiring for admission anything more than a high-school education, now there are over fifty[1] which, beginning with the session of 1910 or earlier, will require one or more years' work in a college of liberal arts. This work, it is presumed, will include thorough courses in physics, chemistry and biology. Twenty or more of these schools have decided to require two or more years of college work before admission to medical study. Of the fifty schools mentioned a few are weak, but the great majority are among the best-equipped medical schools in the country. Some state examining boards are likewise doing their part. Already the Minnesota and North Dakota boards have secured amendments to their laws requiring two years' work in a college of arts preliminary to the study of medicine, thus supporting the medical departments of their state universities which have adopted that requirement. After 1912 Connecticut will require that all graduates in medicine in order to locate in that state must have had a preliminary education of at least one year in physics, chemistry, biology and one modern language in addition to the four-year high school course. It is encouraging to note that the past year has seen many important changes in medical laws. That all sections of the country have been represented in this endeavor to secure better conditions is as gratifying as it is significant.

On the other hand, new medical schools are still being organized solely for profit. These schools are generally devoid of any equipment and have no hospital facilities, but still each in time will turn into the profession from ten to forty or more "physicians" each year. Besides these there are the osteopathic schools, schools of optics, chiropractic schools, schools of vitopathy and other nondescript institutions which are apt to become more numerous as a direct result of the self-sacrificing effort of our better medical schools to raise their requirements.

Graduates of these irregular schools, while supposedly limited in their practice, are in reality unlimited, at least in many states. Therefore all individuals who hold themselves out as ready to treat disease by whatever manner or means should be required to undergo the same test as to their ability and knowledge of those branches of medical science which are essential to an understanding of the human body in health and in disease. Special rules or provisions for any particular system of medicine constitute class legislation and are vicious in their results. All applicants for license should be required to have the same minimum amount of preliminary education; all should be graduates of schools having the same minimum standard of requirements. If the college of one system of medicine is required to have a course covering four years of at least thirty weeks each, excluding holidays, as well as to have thoroughly equipped laboratories and ample clinical facilities, then the schools of all systems of practice should be required to have the same.

Stronger safeguards should be placed about admission to medical practice in many of the states. The examining boards should be given supervision of all medical colleges within their respective states, with authority to pass on the entrance requirements of prospective medical students and to issue or to have issued to medical students entrance certificates. They should have the right to inspect the medical colleges and to close such as are not sufficiently equipped or are not doing satisfactory work. At least the boards should have authority to say what medical schools should be recognized. Some boards already have this power, but the majority do not. Without this right the boards are not in position to protect the public from incompetent physicians.

1. THE JOURNAL A. M. A., Aug. 17, 1907, p. 600.

PREDISPOSITION OR IMMUNITY IN THE CHILDREN OF THE TUBERCULOUS.

The theory that individuals suffering from tuberculosis transmit to their offspring a predisposition to a similar infection seems to have established itself firmly. If this theory be accepted, the proposition that these individuals at the same time transmit a partial immunity, or at least an increased power of resistance to this infection after it has been acquired, seems at first glance rather paradoxical. Yet in recent years a number of observers have taken the position that the children of tuberculous parents possess a degree of protection against this disease which results in a favorable outcome more frequently than may be hoped for among patients whose parents were more fortunate. Numerous statistical studies intended to support this theory have been published since Reibmayr[1] directed attention to the subject in 1892.

So many factors are to be considered in determining the truth of this question that it is difficult to present evidence which is at all conclusive. For instance, a table which gives the history of a series of patients who are said to present a history of tuberculous ancestors, and which does not state whether the parents suffered

1. Mitteilungen über die Erblichkeit und Infektion der Schwindsucht, Braunschweig, 1892.

from tuberculosis previous to the birth of the patient or afterward, is evidently of no value whatever. The matter is further complicated by the well-recognized fact that a considerable number of people are at one time or another subject to some unrecognized tuberculous infection. The most striking illustration of this fact is found in the report of Naegeli[2] on a series of 500 autopsies performed at the Pathologic Institute at Zurich. Naegeli found evidences of either a healed or an active tuberculous process in 100 per cent. of all persons over 18 years of age. While this is a higher proportion than has been reported by most other observers, the fact remains that probably many patients are reported as having a negative family history, one or both of whose parents were suffering from an unrecognized tuberculous lesion.

More or less confusion is caused by the difference in the methods of presenting the statistics adopted by the different observers. A recent report,[3] following the method of several previous observers, compares the percentage of those having a positive family history in the total of all who showed improvement to the percentage of like patients in the total of those who did not improve, and points out that the balance is in favor of the former. If the same figures are used to compare the proportion of all patients having a bad family history who improved with the percentage of those having a negative family history who improved, the balance is seen to favor those presenting a negative family history.

Most of the statistics have been drawn from the reports of institutions devoted to the treatment of pulmonary tuberculosis and, therefore, presumably dealing for the most part with adults, or at least excluding the very young. While pulmonary tuberculosis is relatively rare among young children, tuberculosis in its varying manifestations is responsible for a not inconsiderable proportion of deaths among infants. Baginsky[4] found it in 17.7 per cent. of 1,383 autopsies on children under 1 year; Heubner,[4] in 26.6 per cent. of 75 children from 9 to 12 months old; Heller,[4] in 29 per cent. under 2 years. Tuberculosis in the first few months is almost unknown and it is reasonable to suppose, therefore, that the numerous instances of tuberculosis in older infants is due to infection rather than to heredity. The infection in most instances must occur from some member of the household, as there is little chance for other exposure. The children of tuberculous parents are particularly exposed to this danger of infection, and the chances are that such children constitute a majority of the infant victims of tuberculosis. Those children of tuberculous parents who have been favored by the agency of "variation" with a sufficient degree of natural immunity to withstand the perils of infancy under such conditions, we should naturally expect to exhibit an unusual degree of resistance if they later became infected, while their unfortunate brothers and sisters who were not so favored did not live long enough to have their names enrolled on the statistics of our institutions.

It will be seen that the difficulties of solving this problem are very great. To draw a fair comparison, it would be necessary to contrast the course of the disease in all the tuberculous children of a certain number of tuberculous parents, with the course of the disease in patients whose parents, it was reasonably certain, were not tuberculous. Differences of age, of race, of treatment, etc., must be considered and, finally, unless the number were very large the statistics might in the end point ironically away from the truth.

2. Virchow's Archiv., cix.
3. von Ruck: Amer. Jour. Med. Sci., 1907.
4. Quoted by van Amstel: Beiträge zur Klinik der Tuberk., vii, Part II.

THE UNFULFILLED PREMONITION.

Sensational stories are so often concocted, in which the turning point of interest lies in the fulfillment of a premonition that has come over the individual and can not be shaken off, that many nervous persons suffer extreme tortures as the result of having such premonitions. In moments of danger, indeed, the presence of them often causes a loss of presence of mind which is so important for safety in times of crisis. In spite of the frequent disappointment as to their fulfillment, some persons still continue to harbor the thought that some time their worst fears will be realized, and so they go through many anxious hours. The ordinary run of stories in this matter only serves to feed fuel to their nervous excitement and make them ever more timorous. It has been well said that most of our troubles never happen, and this is a sort of consolation that can be used with effect for these patients, but in addition physicians may welcome striking incidents that make for disbelief in the value of premonitions. There is a noteworthy example of this antidotal kind in the last installment of Carl Schurz's recollections in the September *McClure's*.

On the morning before the battle of Missionary Ridge General Schurz's first thought on waking from a quiet sleep was that on that day he should be killed. In spite of every effort to shake off the depression and to laugh at his own weakness, he found that the voice of premonition would always come back. He even came very near sitting down to write "a last letter" to his wife and children, but a feeling of shame at his superstitious emotion enabled him to desist from this. In spite of constant occupation, the voice that told him "this day I shall be killed," would not be silent. A restless impatience came over him and this increased during the long hours before his command was called into action. When the order came that would bring him under fire, the voice within said, with startling distinctness, "now is the time." The shells were flying over the position occupied by his troops, and finally one of them seemed to be coming directly toward him and he could not avoid it. It struck the ground under his horse, broke the forelegs of the horse

of one of his orderlies, but did not explode until it struck an embankment twenty yards behind him and hurt no one. The effect was electric. The voice within him said, "This was the one and it did not kill after all," and instantly the premonition of death vanished and his usual good spirits returned. He never again had another such premonition.

The remedial effect of a story like this on patients who insist persistently on finding food for melancholy thoughts in their premonitions can be readily understood. Unfortunately the stories in which the premonitions fail as strikingly as this are so rare compared to those of opposite character, that our ordinary literature provides little of therapeutic material of this kind and, therefore, General Schurz's experience may prove well worth treasuring in the doctor's notebook for use on proper occasions.

NATIONAL SANITARY DEPARTMENT IN CUBA.

In the official gazette of Aug. 27, 1907, Governor Magoon publishes a decree establishing the national sanitary department in Cuba. He begins by stating that it has been found that the municipal governments have not been able to provide sufficient funds for the support of an efficient sanitary service nor has it been possible to obtain such concerted action as was necessary to that end. The organization of the new department includes: 1. A chief sanitary officer who is to be the head of the sanitary department and executive officer of the national sanitary board. 2. A national sanitary board of six members, including a qualified engineer. 3. A local sanitary officer for each municipality, reporting and taking instructions from the chief sanitary officer. The decree also provides penalties for failing to comply with sanitary ordinances and, most important of all, makes a liberal appropriation for carrying out the purposes of the decree. Now that a proper organization has been provided, together with the necessary funds, it is hoped and believed that there will soon be manifested a great improvement in the sanitary conditions in Cuba, and that yellow fever will disappear as it did under the former American administration.

INTERNATIONAL MILITARY MEDICAL STATISTICS.

The supplement to the annual report of the Surgeon General of the Army for 1907, a copy of which is just received, contains international military medical statistics for 1906. The tables are those agreed on at the meeting of the International Commission for the Unification of Military Medical Statistics of Armies, held at Budapest in 1894, and modified by the last meeting held at Madrid in 1903. They are calculated for the United States Army proper, white and colored, and include enlisted men only. A comparison is made of the morbidity and mortality statistics of the army by countries, by arms of service and by seasons, and a statement is also made of the number and ratios of certain special diseases which were agreed on by the International Commission. It appears that the highest admission and death rates occurred in the Philippines Division. The lowest admission rate in Alaska, the lowest death rate in Cuba. Comparing the various army posts, the highest admission rate occurred at Camp Stotsenberg, Luzon, P. I., a post notoriously unhealthy on account of the prevalence of malarial fever in epidemic form. The lowest admission rate occurred at Camp Columbia, Cuba. By arms of service the highest admission rate was found in the field artillery and the lowest, just about one-half of the former, in the ordnance. The lowest death rate was also found in the ordnance and the highest in the infantry. According to seasonal prevalence, the highest admission rate was found in August and the lowest in February, while the highest death rate occurred in March and the lowest in November.

THE "CONSCIENTIOUS OBJECTOR" TO VACCINATION.

The complexity of modern life makes it difficult at times to reconcile the preservation of public safety with individual liberty. This is nowhere more marked than in the enforcement of regulations for the control of infectious diseases. In the matter of protection against smallpox by vaccination the importunities of the ignorant majority have resulted, in most countries, in the adoption of a "conscientious objectors'" clause to the regulations regarding inoculation. This clause allows those individuals who have "conscientious objections" to vaccination to dispense with this most essential prophylactic measure, both for themselves and their children. Did such dictates of conscience react only to the detriment of those who are old enough to hold such opinions, little objection could possibly be raised. Unfortunately, the ones most liable to suffer are the helpless children of such individuals. This point is well brought out by the recent outbreak of smallpox in Vienna,[1] a city that has been so free from this disease that, in the past decade, the presence of only 22 cases has been officially recognized. Careful investigation on the part of the board of health of Vienna revealed the fact that there are three times as many unvaccinated children at present in that city as in any previous year of recent times. These children, generally speaking, are the offspring of the poor and ignorant, who make up the greater number of "conscientious objectors" to vaccination. These children also are the ones who are suffering from the present epidemic of smallpox. While these conditions furnish further evidence of that inviolable but brutal law of the survival of the fittest, modern humanitarianism would seem to dictate that the helpless offspring should at least be protected from the results of parental folly and ignorance.

THE PLAGUE IN SAN FRANCISCO.

The reported recrudescence of plague[2] in San Francisco is a matter of somewhat more than merely local importance, and while there may not be great danger of spread to other parts, even in California, any neglect of precautions would be culpable. It may be that under proper conditions of living the plague would find a rather limited field in most parts of this country, but

1. See Vienna Letter, page 952, this issue.
2. See General news, this issue, page 951.

urban conditions are by no means uniformly such as would insure us against such a visitation, and the addition of plague to the list of diseases would be most unwelcome in any locality, even though the cases were isolated and few. Although handicapped by the disgraceful conditions reported in the City and County Hospital, and by the apathy and inefficiency that is charged to the local board of health, it is fortunate that San Francisco now has a mayor who can be expected to appreciate its needs properly, instead of the one who was in control during the plague prevalence of several years ago. The San Francisco County Medical Society is also fully awake to the situation and is taking active steps to aid in the enforcement of recognized principles of plague control. These facts give us confidence to believe that the present outbreak will soon be under control.

Medical News

ARKANSAS.

Society Meeting.—At the annual meeting of the Fifth District Medical Society, held at Dardanelle late last month, Dr. Norborn H. Jackson, Pontoon, was elected president; Dr. James S. Kolb, Clarksville, vice-president, and Dr. S. Paul Vaughter, Little Rock, secretary and treasurer.

The Water Question.—At a meeting of the Pulaski County Medical Society, in Little Rock, August 26, the committee of public health and sanitation was directed to investigate the condition of the city water and report its findings to the society, at a meeting to be called within ten days or two weeks.

Personal.—Dr. John P. Runyan was re-elected dean of the College of Physicians and Surgeons, Little Rock, at the meeting of the stockholders, September 2.——Dr. Leonce J. Kosminsky, city physician of Texarkana, has been made professor of histology and bacteriology in the college. Dr. W. Turnor Wootton, Hot Springs, has announced his intention of retiring from the Federal Medical Board.——Dr. Elmer LeR. Biggs, Hot Springs, has returned from Europe.

Physician Fined.—Dr. James C. Parish, Hot Springs, is reported to have been fined $50 in police court, August 26, for failing to warn a patient that he was unable to prescribe water from the hot springs because he had not been registered by the government. He is also said to have used insulting and abusive language toward the detective who secured the evidence on which conviction was obtained. This is the first conviction under the new city ordinance, which aims at extending protection to visitors to Hot Springs and especially to invalids.

CONNECTICUT.

Personal.—Dr. William G. Daggett, New Haven, is reported to be seriously ill with typhoid fever.——Drs. John Weldon, Theodore R. Parker, Frank E. Guild, Windham, and Robert C. White, Willimantic, have been appointed members of the hospital board of St. Joseph's Hospital, Willimantic.

Infectious Diseases.—During July 143 cases of measles were reported in 13 towns; 64 cases of scarlet fever in 28 towns; one case of cerebrospinal fever; 117 cases of diphtheria in 34 towns; 69 or more cases of whooping-cough in 16 towns; 55 cases of typhoid fever in 28 towns, and 29 cases of consumption in 18 towns.

July Mortality.—During July 1,508 deaths were reported in the state, equivalent to an annual mortality rate of 17.8 per 1,000. Of the decedents 459 were under one year of age, and 117 between 1 and 5 years of age, the percentage of mortality under 5 years of age being 38.2. Among the general causes of death were: Diarrhea, 320; heart disease and diseases of the nervous system, each 130; accidents and violence, 127; consumption, 94; pneumonia, 49; and of communicable diseases: Typhoid fever, 11; measles, 10; diphtheria and whooping-cough, each 8; scarlet fever and cerebrospinal fever, each 6; erysipelas, 3, and influenza, 2.

DISTRICT OF COLUMBIA.

Personal.—Dr. Charles M. Emmons has been appointed a member of the board of police and fire surgeons of Washington, to fill the vacancy caused by the resignation of Dr. Birch.——Dr. James F. R. Appleby, Washington, underwent an operation at the George Washington Hospital, August 26, and is reported to be improved.

More Typhoid.—Local health officials report that there is a decided increase in the number of typhoid fever cases in the District of Columbia, but there is no cause for alarm, as the amount of typhoid in Washington is comparatively slight, and the health officials expect that there will be nothing approaching an epidemic of the disease. On August 21 there were 173 cases of typhoid fever under treatment, and during the week ended August 17, 34 new cases were reported to the health officials. During the corresponding week of 1906, 75 cases of typhoid fever were reported, making a decided improvement over the situation of a year ago.

FLORIDA.

Society Organized.—The medical fraternity of Lafayette County met August 1 at Mayo and organized the Medical Association of Lafayette County, electing the following officers: President, Dr. Charles A. O'Quinn; vice-president, Dr. Oveida F. Green, and secretary and treasurer, Dr. George E. Bothwell, all of Mayo.

Personal.—Dr. C. E. Thompson, De Funiak Springs, has returned from a trip abroad.——Drs. Charles E. Terry, Hiram Byrd and Robert H. McGinnis were appointed at a recent meeting of the Duval County Medical Association a committee to investigate the social evil in Jacksonville and to report on the advisability of making an effort to check the evil.

GEORGIA.

Protest Against Poor Telephone Service.—The physicians of Atlanta are taking a hand in the protest against poor telephone service. A committee has been appointed by the Fulton County Medical Society to investigate and to take steps toward the correction of the abuse.

Personal.—Dr. Lodrick M. Jones has been appointed superintendent of the State Sanitarium, Milledgeville, vice the late Dr. Theophilus O. Powell.——Dr. James M. Kelley, Griffin, has purchased from Dr. J. M. Head, Lifsey Springs, in Pike County, and will establish a sanitarium and health resort.——Dr. W. B. Speyn has resigned from the house staff of the Macon City Hospital on account of ill health.

ILLINOIS.

Communicable Diseases.—A case of smallpox is reported from Kankakee.——Dr. Elvin F. Baker, Jacksonville, inspector of the State Board of Health, has discovered five cases of smallpox in Kilbourne and has ordered a quarantine established.——Dr. Charles E. Crawford, Rockford, inspector of the State Board of Health, has gone to investigate an outbreak of smallpox in Cole Valley.——Diphtheria is reported in St. Anne, where three cases have appeared.

Personal.—Dr. T. H. D. Griffith, Cairo, has resigned from the United States Public Health and Marine-Hospital Service to accept a position as medical inspector and assistant secretary in the office of the State Board of Health, Springfield.——Dr. T. M. McMichael, Monmouth, who has been ill with erysipelas, is reported to be better.——Dr. and Mrs. R. M. Charles Ball, Monmouth, have returned after a summer spent on the Pacific Coast.——At a farewell reception given to Dr. Samuel A. Graham, retiring assistant superintendent of the Illinois Eastern Hospital for Insane, September 2, he was presented with a carving set and smoking jar.——Dr. and Mrs. Frank Allport, Chicago, have returned from Europe.——Dr. and Mrs. George E. Fosberg, Chicago, are spending September in Atlantic City.——Dr. John Segsworth, Wilmette, who was badly injured some weeks ago by being thrown from his buggy, has recovered.

Chicago.

Assessment Against Hospitals.—The board of reviews has announced assessments against hospitals in Chicago amounting to more than $2,000,000, the tax on which will be approximately $27,000. This assessment followed the recent decision that the hospitals come within the scope of the law.

South Chicago Now Disease Center.—The department of health says that the territory surrounding the steel plant of South Chicago is now the storm center of disease. During the first six days of September six cases of scarlet fever and one case of diphtheria were reported from this district.

August Mortality.—During August 2,783 deaths were reported, 566 more than for the preceding month, and 296 more than for the corresponding month of 1906, the respective annual death rates per 1,000 being 15.55, 12.29 and 14.33. The

deaths from acute intestinal diseases far outnumbered all others, with 796; then followed consumption, with 222; violence (including suicide), with 199; pneumonia, with 186; heart disease, with 180, and nephritis, with 169.

Deaths of the Week.—During the week ended September 7, 574 deaths were reported, 42 fewer than for the preceding week and 59 more than for the corresponding week of 1906, the respective annual death rates per 1,000 being 14.20, 15.24 and 13.10. Acute intestinal diseases heads the death list with 137, followed by consumption and cancer, each with 36; heart disease, with 38; violence (including suicide), with 32; pneumonia, with 30; nervous diseases, with 26, and nephritis, with 22. During the week typhoid fever caused 13 deaths; scarlet fever, 9, and whooping-cough, diphtheria and measles, each 4.

Medical Inspection of Schools.—The department of health has divided the city into eleven general districts, each of which has nine subdivisions. Each district is in charge of a medical inspector and each subdivision under the charge of a school medical inspector. Every district medical inspector will direct the work of nine school medical inspectors and will be held responsible for the health of their district. The school medical inspectors will visit every school in the city every school day during the year and will, in addition, do all things calculated to safeguard the health of the pupils and of the families. The vaccination of school children will not begin until after October 15.

INDIANA.

Local Organization.—The physicians of Kendallville, on August 20, organized the Kendallville Medical Association, with the following temporary officers: Chairman, Dr. Cyrus A. Gardner; and secretary, Dr. Albert G. Coyner.

Personal.—Dr. William A. Wildman, San Jacinto, is reported to be ill with typhoid fever.——Dr. Leonard F. Schmauss and family, Alexandria, have started for Germany.——Dr. John D. Chambers, Fort Wayne, returned from Europe August 19.

Smallpox.—The presence of smallpox at Orestes, near Alexandria, has caused 15 persons to be placed in quarantine and a dozen others to be placed under surveillance by the health authorities.——Several cases of smallpox are said to exist in Washington Township and Deer Creek.

Praise for Dr. Fletcher.—At the celebration of Founder's Day at "Neuronhurst," Indianapolis, August 18, the exercises were in the nature of memorial services for the late Dr. William B. Fletcher. Addresses were made and letters read, praising the life and the work of Dr. Fletcher.

New Name for College.—By the affiliation of the Indiana University and the State College of Physicians and Surgeons, Indianapolis, the name of the medical school is dropped and that of the "Indiana University School of Medicine" substituted. It is specified that the board of trustees of the state university shall have full control of the medical college, but there will be no change in the course of instruction nor in the faculty. The first two years of work are to be given at the state university, Bloomington, and the last two at Indianapolis.

IOWA.

Typhoid Fever.—It is reported that nearly 100 people in Des Moines are ill with typhoid fever.

Personal.—Dr. William S. Osborn, superintendent of the State Hospital for Inebriates, Knoxville, has resigned.——Dr. Delmer L. Davis has been elected general medical director of the Helping Hand Mission, Sioux City.——Dr. Charles G. Tilden, Riverside, has been chosen as college physician of the Iowa State College, Ames, vice Dr. Wilbert G. Harriman, resigned.——Dr. John R. Rudis-Jicinsky, Cedar Rapids, has been presented by the Bohemian Sokols of America with a gold and silver medal in appreciation of his services for Bohemian Americans.——Dr. and Mrs. Percy R. Wood, Marshalltown, returned from Europe August 24.——Dr. Charles J. Plonske, Bancroft, has started for Europe.

KANSAS.

Typhoid Fever.—On account of the prevalence of typhoid fever in Leavenworth, Dr. Joseph F. Wallace, secretary of the local board of health, has issued a circular letter to physicians, insisting on the reporting of all cases of typhoid fever, as required by law.

Vital Statistics for August.—During July there were reported to the Kansas Board of Health 75 cases of tuberculosis, with 51 deaths; 163 cases of typhoid fever, and 25 deaths; 43 cases of diphtheria, and 8 deaths; 14 cases of scarlet fever, and 2 deaths; 76 cases of smallpox and one death, and 74 cases of measles, and 4 deaths.

Organization.—The practitioners of Morris County met in Council Grove, August 10, and organized the Morris County Medical Society, with an initial membership of nine. Dr. William E. Crawford, Council Grove, was elected president; Dr. William A. McCollough, Delavan, vice-president; Dr. J. Wilson Evans, Council Grove, secretary, and Dr. Bert E. Miller, Council Grove, treasurer.

Personal.—Drs. Walter P. Keene and C. C. Elliott have been appointed assistant surgeons in the Soldiers' Home Hospital, Leavenworth.——Dr. William B. DeWees, Salina, has gone to Chicago, Rochester, Minn., and New York for postgraduate work.——Dr. Clyde Appleby, Meriden, has become a member of the staff of the National Military Home, Leavenworth.——Dr. Samuel M. Myers, Potter, recently had his nose broken by being struck with a horseshoe.——Dr. John H. Outland, Topeka, is reported to be seriously ill.

KENTUCKY.

Epidemic of Typhoid.—The town of Milford, Bracken County, is reported to be suffering from an epidemic of typhoid fever. Twenty cases have been reported so far, with four deaths.

Milkman Barred from City.—The city health department of Louisville, as the result of an investigation of samples of milk obtained from Hagen Bros., Elizabethtown, is reported to have notified milk dealers that they must not handle milk from this dairy, and has ordered the sanitary inspectors to stop all milk from this dairy at the city limits.

Antituberculosis Association.—At a recent meeting of the Louisville Antituberculosis Association a membership of 858 was reported. Dr. George W. F. Rembert, physician in charge of the association's sanatorium at Hazelwood, expressed his approval of the administration building and other buildings of the sanatorium, and stated the location was ideal. The sanatorium will soon be ready to receive patients.

Personal.—Dr. Zach. A. Thompson, Pikeville, has been appointed medical referee of Pike County.——Dr. Joseph R. Anderson, Owensboro, who was recently operated on in Louisville, has entirely recovered and returned to his home.——Dr. W. R. Pinnell has been appointed assistant superintendent of the Louisville City Hospital, vice Dr. C. Louis Moir, resigned. Dr. J. Monett Menefee has been appointed superintendent of the hospital.——Dr. Henry V. Pennington, London, is reported to be critically ill with typhoid fever.

Protest Against Hospital.—A protest has been prepared and filed with the Antituberculosis Association by residents in the neighborhood of Waverly Hill, which point has been selected by the association for the antituberculosis hospital. The meeting of the residents was presided over by Dr. J. W. Blanton of Valley Station, and a petition was signed by practically all the residents of the neighborhood. It is claimed that the neighborhood now has the almshouse, the eruptive hospital and a private sanitarium for the treatment of tuberculosis cases, and placing among them a public sanitarium would depreciate the value of their land, and would place in that community all the contagious hospitals of the county.

MARYLAND.

Tuberculosis Exhibit.—The traveling exhibit of the Maryland Association for the Prevention and Relief of Tuberculosis is a popular feature of the Baltimore County Fair, and is being visited by great numbers of people. Daily lectures are given and demonstrations made, and literature is distributed. The exhibit consists of photographs, charts, appliances, models of shacks, window-tents, etc.

Baltimore.

Increase in Typhoid Fever.—During the week ended September 7, 137 cases of typhoid fever were reported, 94 more than for the preceding week.

Ill and Injured.—Drs. Charles W. Hennington, Franklin W. Griffith and Percy T. Watson, internes at the Johns Hopkins Hospital, are ill with typhoid fever.——Dr. H. Stanley Gorsuch, while running for a car, September 5, broke his leg, the second time this accident has occurred within three months.

Personal.—Dr. Stephen H. Watts of Johns Hopkins Hospital, has been made surgeon-in-chief of the University of Virginia Hospital, Charlottesville.——Dr. N. Trigant Burrow has been appointed assistant in experimental psychology at the Johns Hopkins Hospital.——Dr. H. Barton Jacobs will sail from Europe, September 25.——Dr. W. C. Pennington has returned from Europe.——Dr. James J. Mills is in Paris.

MASSACHUSETTS.

Hospital Notes.—St. Elizabeth's Hospital, Boston, has purchased 5,000 feet of land and buildings thereon, adjacent to the present site, on which an addition to the hospital is to be built.——Lawrence General Hospital has been given a complete *x*-ray outfiet.

Personal.—Dr. John H. Bannon, Lawrence, who resigned from the school board to become a school physician, has been dropped from that position by a peculiar interpretation of the city ordinance.——Dr. John J. Sullivan has been appointed ward physician of Lawrence.

MINNESOTA.

Smallpox.—During the nine weeks ended August 19, 360 cases of smallpox were reported to the State Board of Health, an average of 40 cases a week, the highest summer rate for several years.

Internes Strike.—The entire staff of internes of St. Joseph's Hospital, St. Paul, resigned during the night of August 22, on account of alleged grievances. The communication addressed to the mother superior expressed general dissatisfaction with methods employed in the institution, and especially with the status of the internes.

Personal.—Dr. Edward W. Buckley, St. Paul, has been appointed medical director of the Knights of Columbus.——Dr. David E. Seashore, Duluth, was rendered unconscious and sustained severe wounds of the forehead in a runaway accident, August 27.——Dr. John C. Harding, St. Paul, was operated on for appendicitis at St. Luke's Hospital, August 28.

Sanatorium Soon to Open.—The State Sanatorium for Consumptives, Walker, will be ready to open October 1. It is expected that a charge of $1 a day for maintenance will be made to patients who enter the institution. As a condition for admission the patient must have resided in the state for a year, and must be in the incipient stages of pulmonary tuberculosis. Applications are made to Dr. Walter Macley, superintendent, who will have the applicant examined by local physicians. If the applicant has no funds, admission will be granted by the county board, who will pay the cost of treatment and care.

NEBRASKA.

Personal.—Dr. H. Douglas Singer, assistant superintendent of the Northern Hospital for the Insane of Nebraska, Norfolk, has been appointed director of the Illinois State Psychopathic Institute, to be built at Kankakee, the Illinois Eastern Hospital for the Insane.——Dr. Frank E. Osborn, Beatrice, has been appointed superintendent of the State Home for Feeble-Minded, vice Dr. Andrew Johnson.

NEW YORK.

July Death Rate of State.—The total number of deaths in this state in July was 11,959, equivalent to an annual death rate of 17.4 per 1,000, which is slightly below the average for the past five years. An epidemic of measles nearly doubled the number of fatal cases of that disease, and there was an increase in the number of deaths from scarlet fever.

Sight and Hearing of School Children.—The state health and educational departments will act jointly in testing the sight and hearing of the school children in 5 000 school rooms in the incorporated villages of the state. The teachers will conduct the examinations of all children over 7 years of age. Eventually the tests will be extended to all schools in the state.

New York City.

Ellis Island Hospital.—The contract to complete the contagious disease hospital at the Ellis Island immigration station has been awarded for $260,000.

Personal.—Dr. and Mrs. L. Duncan Bulkley gave a reception in honor of the members of the Sixth International Dermatological Congress, September 10.——Dr. Reynold W. Wilcox returned from Europe, September 3.

Cocain Users.—It is claimed that there are more than 80,000 users of cocain in this city. It is unlawful for any person to sell cocain or any of its admixtures except on the written prescription of a reputable physician, such prescription to be filled only once. Violations of this law are punishable by imprisonment for not more than one year, or a fine of not more than $1,000, or both.

Typhoid Spreading at New Brighton.—There were 30 cases of typhoid fever under treatment during the week ended August 31, as compared with 17 for the week ended August 17. Conditions there are discouraging in that there is no general sewer system. The principal water supply is from driven wells, but there are also individual wells and cisterns. The disease in nearly every case is due to the use of surface water.

Money for Hospitals.—The total amount asked for by the trustees of the city hospitals for 1908 is $985,858, which is $211,910.79 in excess of the appropriations for 1907. The item of salaries and wages shows an increase of $131,579 above the appropriation for 1907. In the budget of the department of public charities the total estimate amounts to $2,700,188.63, an increase of $363,917.07 over the estimated expenses for 1907. Of this amount the increase desired for salaries is $204,066.07.

NORTH CAROLINA.

Clinical Laboratory Open.—The Southern Clinical Laboratory, for more critical study of pathology and for the examinations of morbid specimens for the profession at large, was opened September 1, at Wake Forest.

July Mortality.—The reports for July from 20 towns, aggregating a population of 174,300, showed 271 deaths, equivalent to an annual death rate of 18.6 per 1,000. Diarrheal diseases caused 42 deaths; consumption, 36; heart disease, 25; typhoid fever, 23; brain diseases, 13; nervous diseases, 11, and violence (including suicide), 10.

Morbidity for July.—During July measles was reported from 24 counties, whooping-cough from 7 counties, scarlet fever from 6, diphtheria from 17 counties, typhoid fever from 72 counties, malarial fever from 21 counties, cerebrospinal meningitis from 7 counties, intestinal diseases from 8 counties, pneumonia from 13 counties, and smallpox from 17.

Medical Schools Open.—The annual session of the Medical Department of the State University, Raleigh, opened September 9, with the largest class on record.——The North Carolina Medical College, Charlotte, will open for its nineteenth annual session September 16. The new buildings are now in occupancy, and the work of the first two years of the medical course, formerly taken at Davidson, will now be taken in the new building at Charlotte.

Personal.—Dr. Charles M. Clodfelter, Lexington, was seriously injured recently while making a night call, by falling into an open ditch.——Dr. Hubert A. Royster, Raleigh, has been made a member of the board of trustees of the State Reformatory. The board will shortly meet and proceed to take steps to establish the reformatory as authorized by the legislature at its recent session.——Dr. and Mrs. Hillary M. Wilder, Charlotte, sail from New York for Europe, September 18.——Dr. J. D. McDowell, Charlotte, has gone to the Adirondacks for his health.

PENNSYLVANIA.

Alumni Officers Elected.—The following officers have been elected to serve the Alumni Association of the Medical Department of the University of Pennsylvania: President, Dr. James B. Walker; vice-president, Dr. Henry R. Wharton; secretary, Dr. Wilkes O'Neill, and treasurer, Dr. O. G. Levis.

Typhoid Fever in Ridgway.—It is reported that Ridgway, a city of 6,000 people, is infected with typhoid fever and that there are at present 225 cases in the city. One out of every three houses is said to bear a typhoid fever placard, and many houses contain from three to five cases of the disease. The hospitals are all overcrowded and many emergency institutions have been opened.

Society Organized.—Through the efforts of the district officers of the sixth censorial and fourth councilor districts of Pennsylvania, the Juniata County Medical Society was organized at Mifflintown, August 7. A large number of members of the Huntingdon and Mifflin County medical societies were present. Dr. Luther B. Kline, Catawissa, councilor for the fourth district; Dr. Alexander S. Harshberger, Lewistown, censor of Mifflin County, and Dr. William H. Sears, Huntingdon, censor for Huntingdon County, were present and assisted in the organization. Eleven members were enrolled and the following officers elected: President, Dr. Isaac N. Grubb, Thompsontown; secretary, Dr. B. T. Long, Mifflin. The organization of the new society completes the work of organization in the fourth councilor district, as every county in the district now has an active organization.

Philadelphia.

Health Report.—The total number of deaths reported for the week ended September 7 was 462, an increase of 28 over the number reported the preceding week and a decrease of 27 from the number reported the corresponding week of last year. Of the whole number 244 were males and 218 females. The principal causes of death were: Typhoid fever, 11; scarlet fever, 3; pertussis, 5; diphtheria, 5; consumption, 43; cancer, 13; apoplexy, 21; heart disease, 39; respiratory dis-

eases, 32; enteritis, 185; Bright's disease, 28; congenital debility, 18; suicide, 4; accidents, 14; and marasmus, 18. There were 150 cases of contagious disease reported, with 18 deaths, as compared with 156 cases and 11 deaths reported in the previous week.

Consumptive Deaths Reduced.—One of the most important features in the report of the Henry Phipps Institute is the statistical study of the influence of the institute on the death rate from tuberculosis in this city. This report shows that the death rate, from tuberculosis, in the wards of the city containing institutions for the treatment of the disease, has been reduced, while some of the adjoining wards have had an increase. The Sixth ward has had the greatest reduction in death rate. For the period between 1903 and 1905, inclusive, there was a reduction of 2,591 per 1,000, and during the years 1904 and 1905, inclusive, a reduction of 1,474 per 1,000. The greatest reductions have been in the slum district, the foreign district, the colored districts and the manufacturing districts. A comparative table contained in the report shows that the average death rate in the ten years 1896 to 1905 has been reduced from 2,151 per 1,000 in the first-named year to 1,932 per 1,000 in the last. The highest was in 1899, when the rate was 2.224 per 1,000. From 1896 to 1897 there was an abrupt fall; from 1897 to 1898 a rise; from 1898 to 1899 a decided rise; from 1899 to 1900 a considerable fall, with varying gradations in the intervening years, until from 1904 to 1905 there was a very marked fall. The periodicity of the rise and fall, the report says, applies to all diseases and the death rate in general. And although the fall since 1903 was doubtless in part cyclic, it is significant that the most rapid reduction of the ten years is in the period since the scientific study for the prevention of the disease has been actively carried on.

Club for Medical Students.—Recognizing the great need of a house for its undergraduate students and alumni, the Medico-Chirurgical College has procured the club house recently vacated by the Order of Elks at 1609 Arch Street, and has established a club similar to Houston Hall of the University of Pennsylvania. The building has been completely renovated and furnished and offers every advantage for a thoroughly equipped club. The officers and chairmen of the committees of the club are: President, Dr. Watson R. Greene; honorary president, Hon. John E. Reyburn; vice-president, Dr. Benjamin F. Devitt; secretary, G. H. Shuman; assistant to the treasurer, F. R. Magowan; house committee, Dr. W. Easterly Ashton; membership committee, Dr. Seneca Egbert; library committee, Dr. James M. Anders; committee on ways and means, Dr. Arthur C. Morgan; discipline committee, Undegraduate Student; committee on care of the club house, Dr. B. F. Devitt; committee on café, Dr. R. Walter Starr; committee on sale of tobacco, books, etc., Dr. John A. McGlinn; committee on billiards and bowls, Dr. Joseph A. Cramp; committee on society room, Dr. I. N. Broomell, and committee on complaints, Dr. Seneca Egbert. The board of governors is composed of thirty-five members, constituted as follows: Three from the board of trustees of the college; ten from the faculties of medicine, dentistry and pharmacy; ten undergraduate students; and eleven alumni representing the departments of medicine, dentistry, pharmacy and pharmaceutic chemistry. The opening of the club marks a new era in the history of the college and is an evidence that the board of trustees is determined to give its students the same advantages and privileges that are enjoyed by university graduates.

RHODE ISLAND.

Personal.—Dr. Thomas F. Kennedy, Woonsocket, returned from Europe August 24.——Dr. Fred B. Jewett, the retiring superintendent of the State Hospital for the Insane, Howard, was presented by the employés and associates with a handsome roll-top desk, medicine chest and two medical books. The presentation address was made by Dr. George E. Simpson, deputy superintendent.

Albany Alumni Meet.—The Albany Medical College Alumni Association of New England held its ninth annual meeting in Rhode Island Hall, Brown University, Providence, September 5. The secretary's report showed a total membership of 112. The following officers were elected: President, Dr. Creighton W. Skelton, Providence, R. I.; vice-president, Dr. John J. Osterhout, Keene, N. H.; secretary, Dr. Edgar C. Collins, Springfield, Mass.; treasurer, Dr. Alfred H. Hoadley, Northampton, Mass., and board of governors, Drs. George B. McGraw, Rhode Island; Eliphalet Wright, Massachusetts; F. T. Clarke, Maine; George J. Holmes, New Hampshire; Leonard Fillmore, Vermont, and George James, Connecticut. The association was the guest of the president, Dr. Skelton, Providence, at a shore dinner at Field's Point, after the completion of the business of the session.

VIRGINIA.

Increase in Medical Students.—Both the Medical College of Virginia and University College of Medicine, which begin their annual session this month, report that indications at present are that their classes will be larger than at any time in the history of the institutions.

Personal.—Dr. William F. Drewry, Petersburg, has been elected president of the Virginia Home and Industrial School for Girls, Richmond, vice Capt. John L. Roper, Norfolk, resigned.——Dr. Robert L. Kern, Richmond, who has been seriously ill, is reported to be convalescent.——Dr. Ralph W. Brown, Roanoke, who was recently operated on for appendicitis in Richmond, is reported to be convalescent.——Dr. McCandlesh M. Moran, Portsmouth, has been appointed coroner of Norfolk County.

GENERAL.

Trachoma Victims Barred.—The Mexican-American Steamship Company has issued a notice that the government quarantine physicians at the ports of Tampico and Vera Cruz will not permit any immigrants to Mexico to disembark if they are found to be suffering from trachoma.

Yellow Fever in Cuba.—The local board of health of Havana reports that from August 1 to 27 inclusive there were 54 cases of yellow fever in Cuba. Twelve of the patients were Americans, 25 Spaniards and the balance Cubans. During the same period 11 deaths were reported.——On September 3 Governor Magoon reported that 4 cases of yellow fever remained in Cienfuegos and one case in Havana, all of Spaniards.——On September 5, 2 cases of yellow fever were reported, one at Cienfuegos and one at Campoflorid. No new case was reported in Havana.

Cholera in Manila.—Chief Quarantine Officer Heiser reports that during the week ended July 20 two patients with suspicious symptoms were taken from a lighter and from a launch to the San Lazare Hospital for observation. Both were found to have plague. Both died. The first patient attacked had been in Manila for several weeks, and so far as could be ascertained he did not come in contact with any person who had recently arrived from a foreign port, nor did he partake of any imported foods. The bureau of health made a searching daily house-to-house inspection of the city, but so far no further cases have been detected. It was thought best to await further developments before imposing any outgoing quarantine detention on vessels leaving Manila. Seven days after the last case no further cases had been reported, nor had there been any marked increase in the daily death rate for the city of Manila.

Society Meetings.—The twentieth annual meeting of the Medical Society of the Missouri Valley was held in Council Bluffs, Iowa, September 5 and 6. Resolutions were adopted by the society on the death of Dr. Donald Macrae, Council Bluffs, one of the founders and first president of the society, and then treasurer for many years. The following officers were elected: President, Dr. William F. Milroy, Omaha; vice-presidents, Dr. Charles B. Hardin, Kansas City, Mo., and Dr. Albert E. King, Blockton, Iowa; secretary, Dr. Charles Wood Fassett, St. Joseph, Mo. (re-elected), and treasurer, Dr. Henry B. Jennings, Council Bluffs, Iowa. A report of the scientific work of the meeting will appear in a later issue of THE JOURNAL.——The Cumberland Valley Medical Association, composed of physicians of Maryland and Pennsylvania, held its fifth annual meeting at the Blue Mountain House, September 5. The following officers were elected: Dr. Americus R. Allen, Carlisle, Pa., president; Drs. W. Preston Miller, Hagerstown, Md., John W. Bowman, Le Moyne, Pa., and John W. Croft, Waynesboro, Pa., vice-presidents; Dr. John J. Coffman, Scotland, Pa., secretary; Drs. Edward S. Berry, Shippensburg, Pa., DeWitt C. R. Miller, Mason and Dixon, Pa., and Henry C. Devilbiss, Chambersburg, Pa., assistant secretaries, and Dr. John J. Koser, Shippensburg, Pa., treasurer. The next meeting is to be held in Cumberland County, Pa., probably at Mount Holly Park, in September, 1908.

National Sanitary Department.—The provisional government of Cuba has created a national sanitary department. The Department of Sanitation, as organized, consists of a chief sanitary officer; a national sanitary board; the necessary personnel for the office of the department and the institutions under its control; a local sanitary officer for each municipality with such office personnel, assistants and employés as may be necessary, and such temporary personnel and employés as may be

authorized for the study and control of epidemic diseases, and to meet obligations imposed by the decree. The chief sanitary officer, executive officer of the national sanitary board, will exercise general supervision over the sanitary service of the republic. The other members of the national sanitary board are the president of the board of diagnosis of contagious diseases, the chief of the section of hygiene, the sanitary officer of Havana, a qualified lawyer and a qualified engineer. The members of the board hold office for four years, and are to meet once a month or at the call of the president. The department is created because the municipal governments have not been able to provide sufficient funds for the support of an efficient sanitary service; because under local control it is not possible to obtain such uniformity of methods and concert as is necessary to an efficient sanitary service; and because the health of the entire republic is endangered by neglect of proper sanitary service.

Plague in San Francisco.—The first case of bubonic plague reported in San Francisco was on May 27; on August 12 a second case was reported; August 13, 3 cases; on August 16, 1 case; on August 26, 1 case; August 27, 2 cases; August 31, 5 cases; September 2, 3 cases, and September 9, 3 cases. Up to September 10, 21 cases had been reported, with 9 deaths. Two of these originated at the City and County Hospital, one being Dr. Clifton Jones, an interne, and the other a hospital steward. The hospital is said to be in a filthy and disgraceful condition, there being many rats, fleas and vermin of various kinds. During last week 80 rats were caught there, six of which were infected with the plague. Dr. Jones is said to be improving, as his case was mild. The locations of origin of various cases are widely distributed, from North Beach to the Mission district, Point Lobos camp, and two cases were found in Lombard Street, several blocks west of Van Ness Avenue, in the unburnt district. One death is reported from Berkeley and one from San José, and one case developed on a steamer between San Francisco and Honolulu, evidently having originated at the former place. These three cases are not included in the account given. Of the 17 cases reported in San Francisco up to September 2, four patients were born in Italy, three in Ireland, two each in Spain and California, and one each in Finland, Russia, Germany, England, Holland and Greece. For the past three weeks large numbers of rats have been noticed in the city, and in the streets and stables from 10 to 30 dead rats a day have been found. Our San Francisco correspondent advises us that a strong committee from the San Francisco County Medical Society is looking after the matter of the plague and has waited on the mayor and asked him to dismiss the present board of health, which is said to be, at least, inefficient, and to appoint competent men on the board. The mayor has stated that if the matters which the committee believes should be attended to, and to which attention has been called, are not given prompt attention, he will summarily dismiss the board. At a recent meeting the county society instructed the committee to request the mayor, in the name of the society, to discharge the board of health, providing that body at the end of one week was not doing this duty. Latest advices are that the board of health has resigned and that Mayor Taylor has appointed a new board, consisting of Dr. Thomas W. Huntington, professor of surgery in the University of California; Dr. Dudley Tait, secretary of the State Board of Medical Examiners; Dr. William Ophüls, professor of pathology in Cooper Medical College, and Drs. Thomas G. McConkey and Guy E. Manning, who were members of the old board. The board is strong and well equipped and has the entire confidence of the medical profession and the community. The United States Public Health and Marine-Hospital Service has assumed charge of the measures to stamp out the plague, the request being made by the mayor of San Francisco, who added that the city would do all things possible to provide funds to carry on the work. Passed Assistant Surgeon Rupert Blue, U. S. P. H. and M.-H. Service, arrived and assumed charge on September 10. Four service officers, in addition to those already there, are en route to assist him. The city has been divided into 12 districts, each in charge of a competent inspector, who has had practical experience with bubonic plague. Under each district inspector are sanitary inspectors and rat catchers. This organization is in addition to the ordinary sanitary equipment of the city. Kitasato's plans, successfully used in Japan, have been adopted with modifications to meet local conditions, and the plague situation seems to be in a fair way to be abated. An attempt is to be made to disinfect the City and County Hospital, but, our correspondent thinks, it is not likely to be successful. As the disease appeared on the water front, arrangements were perfected and have been in force since September 2, to fumigate all vessels before loading and departure from San Francisco, for the destruction of rats. The City and County Hospital and other infected places have been fumigated.

CANADA.

Encouragement in Treatment of Leprosy.—Dr. Fred Montizambert, Director-General of Public Health at Ottawa, who recently visited the Hospital for Lepers in New Brunswick, was very favorably impressed with the treatment used there, as one patient was recently discharged cured and another is progressing favorably.

New Sanatoria.—The new King Edward Sanatorium, near Toronto, for advanced pay cases of tuberculosis, erected under the auspices of the National Sanitarium Association of Canada, through the generosity of two citizens of Toronto, was opened August 28. This makes the fourth institution conducted by this associatian, two at Gravenhurst, Muskoka, and two near Toronto, the two former for incipient cases, the latter for advanced and far advanced cases.——Dr. Fagan, provincial medical health officer for British Columbia, in writing to the government of that province for the $5,000 promised for a consumption sanatorium, states that $70,000 has now been subscribed.

Montreal General Hospital Quarterly Meeting.—For the quarter ended June 30, 1907, the revenue of the Montreal General Hospital amounted to $23,075, while the expenditure was $31,024. Bequests to the reserve fund were $10,000 and the endowment fund $15,282. Dr. Fred J. Tees, acting medical superintendent, reported that 896 patients had been treated to a conclusion in the wards as against 881 for the corresponding period of 1906. There were 80 deaths, 40 occurring within three days of their admission. The average number of patients in the hospital per day was 186. In the outdoor departments there were 12,677 consultations.

FOREIGN.

No Fever in Mexico.—The state health officer of Texas has received a report from E. Liceaga, president of the Superior Board of Mexico, stating that during the week, August 10 to 17, there were no cases of yellow fever in the republic.

Epidemics in Europe.—Cholera is reported at several points in Russia and the authorities of western Europe are on the alert to prevent its introduction. A smallpox scare in Vienna has led to prohibition of public meetings and processions, and the cable states that 166,000 have already been vaccinated and that the crowds almost mob the vaccination stations in their eagerness. A number of cases of smallpox have occurred in the poorer quarters.

The Work of the International Association of the Medical Press.—The *Lancet* gives a report of a committee meeting of this association, held in London, August 3-4. There were representatives from Austria, Germany, Belgium, France, Norway and Great Britain. The president, Professor Posner, Berlin, in his address explained that one of the objects of the association is to provide necessary facilities and privileges for members at all international congresses, so that their difficult work of reporting the congress might be done with as little trouble as possible. Dr. Blondel of Paris, secretary of the association, called attention to the medical papers, so-called, issued and distributed gratuitously by manufacturers, and declared that this has become a real plague in France. Firms prefer to spend large sums yearly in issuing publications of their own in preference to spending the same amount in advertising in genuine medical journals. Consequently the income from advertisements is decreasing. A committee, he said, has been appointed to look into the matter, but so far nothing has been done. Dr. Doléris said that one firm interested in ferruginous products publishes a paper which often contains good articles by good men, who are well paid. He added that such things should not be, and that medical men who write for manufacturers of drugs should not be admitted to the association of the medical press. Professor Posner stated that there are medical men who offer to sell to manufacturers articles describing cures supposed to have been effected by means of some one of that manufacturer's drugs. If the article is refused, the name of the drug is changed and the article is offered to some other firm. The German Association of the Medical Press conferred with the manufacturers. The members were courteously received and shown evidence of the disreputable practices described. A list was therefore drawn up comprising about forty names—not all Germans; Austrians, Italians and others were also willing to sell their services to drug manufacturers—and the German members of the association have decided not to publish any contributions from these individuals. In Germany

a "black list" is not illegal if it can be proved that it is for the public good and not due to personal animosity. The German papers, he said, are also being brought into line regarding the rejection of certain advertisements. As an example of this he mentioned a remedy which presented exaggerated claims and therefore all the papers refused to accept the advertisement until modified. The Belgian delegate said that editors in that country have also been trying to elevate the moral tone of the medical press. The great difficulty, he said, is to find disciplinary powers, as the law against boycotting is very severe in Belgium. Very little has been accomplished in other countries besides Germany. The fear of compromising themselves politically may explain the non-cooperation of the Russians. Dr. Blondel stated that the Russians are as bad as the Americans in the matter of infringement of copyright, which may help to explain their absence from the conference. The manufacturing druggists in France are unwilling to cooperate with the association, as did the German manufacturers when approached by committees.

LONDON LETTER.

(From Our Regular Correspondent.)

LONDON, Aug. 24, 1907.

New Plans to Combat Plague in India.

The appalling magnitude of the plague in India and the futility of the means taken by the government have been pointed out in a previous letter to THE JOURNAL. The government has now made a new departure and proposes to use native aid more in the struggle. This will help to disarm the prejudices of the natives, which have constituted the great obstacle to preventive measures. Indeed, in the recent political agitation in India several of the agitators told the natives that the Europeans were disseminating the plague, pointing out that this was the reason why the natives suffered while the Europeans remained comparatively immune. The government proposes to create a special medical and sanitary organization with a large staff of male and female native assistants under the control of officers of the Indian Medical Service; the use of educated natives in a sanitary service in infected areas, and the grant of scholarships to natives to enable them to study medicine in England, with a view to their return to India as health officers.

Health of Glasgow.

A report published recently states that the death rate of Glasgow for 1906 increased 0.5 per 1,000 over the rate for 1905. This increase, however, is due neither to zymotic ailments nor to respiratory diseases. The most important cause for the increase has undoubtedly been the epidemic of cerebrospinal meningitis which has prevailed in Glasgow for some time. The distribution of these cases has been somewhat puzzling, some of the most congested districts of the city having escaped much more lightly than others.

VIENNA LETTER.

(From Our Regular Correspondent.)

VIENNA, Aug. 24, 1907.

National Committee on Sanitary Affairs.

The Austrian house of parliament is going to appoint a committee consisting of 26 members, to be known as the committee on sanitary affairs. The committee will consider all questions dealing with the sanitary aspect of public affairs. This is looked on as the first step toward the creation of a minister of medical affairs.

Smallpox in Vienna.

Within the past eight days 55 cases of smallpox have been reported in Vienna. This has caused some alarm from the fact that within the last ten years not more than 22 cases of this disease have been seen in this city. Many of the younger physicians have not seen a case o fsmallpox, thanks to the care with which vaccination has been carried out. Of the 55 patients, most of whom are children, 90 per cent. have not been vaccinated. The disease is running a very mild course and the mortality is low, two having succumbed. The most stringent measures have been adopted by the authorities to prevent the spread of the disease, the importation of which seems to be due to the immigration of large numbers of Russian fugitives. The fact has been disclosed that within the last three years the number of unvaccinated children is four times greater than that of previous years; this is notably among the poorer classes, the members of which furnish the bulk of the "conscientious objectors" to vaccination. These classes are now paying the penalty for their "objections."

Therapeutics

[It is the purpose of this department to outline an up-to-date management of disease, to suggest scientific treatment for diseased conditions, and to present prescriptions that are simple, useful and palatable. Prescriptions are written in both the metric and apothecaries' systems, but the amounts of the ingredients are NOT exact translations of one system into the other, but quantities convenient for pharmacist and physician. It should be understood that solids are weighed in grams or fractions of grams, while liquids are measured in cubic centimeters; that a teaspoon holds five cubic centimeters, i. e., more than a fluid dram, hence a 100 cubic centimeter preparation will contain twenty doses.]

Treatment of Burns.

(Continued from page 863.)

If the burns are serious the treatment, as previously stated, will differ according to the way in which they were received. When caused by flames a large area is usually involved presenting all degrees of severity. Systemic treatment has already been considered, and the primary dressing may be any one of those suggested for superficial burns, preferably the picric acid or the boric acid in liquid petroleum.

The dressings should be kept moist and changed no oftener than necessary. Depending on the amount of sloughing, the first one may remain from two to five days; it should then be renewed, and best in sections, so as not to expose a considerable area at one time. At each dressing precaution should be taken against infection, all slough should be removed and the part irrigated with warm physiologic saline solution. Frequently an area of slough will become detached at its center while adherent at its border. Such a slough should be carefully lifted at its center with dressing forceps, incised and the detached portion trimmed free with scissors.

As soon as there is the first sign of granulation tissue, practically as soon as the slough separates, gauze dressing should be discontinued, for the tiny new-formed vessels will penetrate the interstices of the gauze with incredible rapidity, and its removal without their laceration and profuse hemorrhage is impossible. The best dressing at this stage, and until healing is complete, and the one requiring the least frequent changing, is silver foil. It should be placed directly on the granulating surfaces, covered with several layers of dry sterile gauze, and held in place with gauze bandages. Next best is gutta-percha tissue, applied in the same manner.

If advisable, skin grafting may be done at this stage and, in conjunction with the use of silver foil, will greatly hasten the process of repair. There are still some surgeons who prefer to use an ointment, even after all slough is removed, in which case it must not be applied on any open-mesh fabric. The following ointments have been recommended:

Dr. George P. Dale, Dayton, Ohio (*New York Med. Jour.*, Sept. 29, 1906), recommends the following:

R.	gm.		
Zinci oxidi	20		3v
Ichthyol	5	or	3i
Petrolati	20		3v

M. Sig.: Use externally as directed.

Dr. Walter Lathrop, Hazleton, Pa. (*Therapeutic Gazette*, June 15, 1907), recommends the following:

R.

Cerati resinæ.....q. s.

Sig.: Use externally as directed.

Burns from steam generally involve a large area, are not usually so deep as those from other sources unless the exposure is long, but are often more serious by reason of inhaled steam causing a fatal pneumonia. Their treatment should be the same as for those caused by flame.

Gunpowder burns usually require a long and tedious first dressing, particularly if they involve the face and hands. The

removal of the powder particles is best done at this time, and, after the general cleaning up of the patient, probably there is no more satisfactory method than to administer an anesthetic, and with soap and water and a moderately stiff brush, scrub the powder-blackened areas. To one who has not seen this tried it will be a surprise to note the rapidity with which the end is accomplished. The boric acid ointment of the Pharmacopeia, or a cold cream having a petroleum base, should be used on the face and is best applied on a mask. For the hands, picric acid may be used. If the eyes are involved, all foreign particles should be removed immediately as completely as possible, then the eyes should be copiously flushed with:

℞.	gm. or c.c.		
Acidi borici	5		gr. lxxv
Aquæ camphoræ	300	or	fl℥x
Aquæ ad	500		ad Oi

M. Sig.: Eye wash.

Next, with the eyes closed, the eyelashes are smeared freely with sterile petroleum and bandaged. The bandage should be removed and the eyes flushed once or twice in twenty-four hours, depending on the amount of inflammation present. If this is considerable and there appears any danger of an iritis, one or two drops of a 1 per cent. solution of atropin should be instilled at each dressing. If an eye is destroyed, enucleation should be immediate.

In dressing the hands after powder or any other burn, the fingers, of course, should be separated by gauze and kept so until healing is complete, otherwise "webbing" may result.

In burns caused by explosions of any kind there are liable to be all varieties of traumatic complications. Of these Dr. Walter Lathrop, of the State Hospital, Hazleton, Pa. (*Therapeutic Gazette*, June 14, 1907), says: "These patients are treated first for the hemorrhage and shock, which are always present, and when possible the injured parts are thoroughly cleansed. The patient is then anesthetized and coal and other foreign matter extracted from his body, but it is impossible to remove all, and subsequently small pieces are thrown off by Nature, through suppuration. Amputation is done when necessary. The eyes are usually filled with fine dirt and minute particles of coal. These particles are removed as completely as possible and boric acid wash used. . . . Treatment of the body or injured parts consists of sterile dressings, renewed daily for the first week, then followed by . . . petroleum spread on lint with a small quantity of iodoform or acetanilid dusted over it, but not enough to produce dangerous symptoms from absorption." He thinks acetanilid "very valuable, but requires watching where a large surface is involved," and recommends in obstinate cases a combination of ichthyol, balsam of Peru and petroleum. The following proportions will be found satisfactory:

℞.	gm.		
Ichthyol	25		
Balsami peruviani	25	or	āā. ℥i
Petrolati	50		℥ii

M. Sig.: Spread on lint and apply to burn.

Burns caused by hot or molten metal are usually circumscribed and characterized by complete tissue destruction and unusual depth. Their treatment calls for nothing out of the ordinary.

Burns caused by electricity are peculiar only in the shock that accompanies them. Frequently the victim falls, apparently dead. Artificial respiration should be started immediately and kept up while the usual procedures are carried out to combat shock. At the same time advantage may be taken of the unconscious condition to do a painless dressing.

Chemical and *x*-ray burns belong in a special class. If at all serious, their appearance gives almost no indication of the amount of necrosis which may follow and to which they seem particularly prone. They manifest a marked inhibition of all reparative processes, and the *x*-ray burn causes an amount of pain out of all proportion to the lesion. Ointments are of little use except for the purpose of relieving the pain. The curette followed by skin grafting is frequently necessary to effect a cure. The following ointments have all been used, with benefit in some cases and failure in others:

℞.	gm.		
Mentholis	50	or	gr. x
Petrolati	50		℥ii

M. Sig.: Use externally as directed. Or:

℞.	gm.		
Cocainæ hydrochloridi	50 to 2	or	gr. x to xxx
Petrolati	50		℥ii

M. Sig.: Use externally as directed.

Any cocain preparation must be used on excoriated surfaces, with care lest too much be absorbed.

℞.	gm.		
Acetanilidi	2.5	or	gr. xl
Petrolati	50		℥ii

M. Sig.: Use externally as directed.

Large burned surfaces should not be dressed with acetanilid preparations, lest a dangerous amount be absorbed.

SPECIAL TREATMENTS.

Under this head may be mentioned yeast and the continuous bath. When a burn shows extensive sloughing, when the odor is particularly offensive, or when the dressings are very painful, ordinary brewer's yeast makes an excellent dressing. It immediately removes all odor, lessens the discharge, is remarkably soothing, and appears to hasten the reparative process. In burns about the genitals and anus, which it is difficult or impossible to keep clean, no dressing is superior to yeast.

The continuous bath treatment consists simply in immersing the patient in a tub of water and keeping him there till all slough has separated. The water is kept at, or slightly above, the body temperature, and changed as frequently as is necessary to keep it clean. The patient is removed daily, but only long enough to permit removal of loosened slough. This appears to be an ideal form of treatment and is said to give excellent results; certainly it reduces the patient's suffering to a minimum.

Cough in Bronchitis.

℞.	gm. or c.c.		
Ammonii chloridi	5		℥iss
Tincturæ hyoscyami	10		fl℥iii
Syrupi ipecacuanhæ	5	or	fl℥iss
Spiritus frumenti	25		fl℥i
Aquæ chloroformi ad	100		ad fl℥iv

M. et sig.: A teaspoonful, in water, every two hours.

Or:

℞.	c.c.		
Codeinæ sulphatis	20		gr. iv
Ammonii chloridi	5		℥iss
Syrupi ipecacuanhæ	5	or	fl℥iss
Syrupi acidi citrici	25		fl℥i
Aquæ ad	100		ad fl℥iv

M. et sig.: One teaspoonful, in water, every two or three hours.

Cough in Tuberculosis.

℞.	gm. or c.c.		
Codeinæ sulphatis	20		gr. iv
Acidi hydrochlorici diluti	2		fl℥ss
Spiritus chloroformi	5	or	fl℥iss
Syrupi acidi citrici	25		fl℥i
Aquæ ad	100		ad fl℥iv

M. et sig.: A teaspoonful, in water, every two hours.

The following is recommended by D. E. Hughes:

℞.	gm. or c.c.		
Morphinæ sulphatis	10		gr. ii
Ammonii et potassii tartratis	10		gr. ii
Ammonii chloridi	8		℥ii
Syrupi glycyrrhizæ ad	100		ad fl ℥iv

M. et sig.: A teaspoonful in water, every four hours.

Edema Caused by Potassium Iodid.—N. E. Aronstam says that potassium iodid at times may produce an angioneurotic edema of the eyes and face. This furnishes a serious drawback to its administration in syphilis. It can be avoided, however, by combining it with tincture of belladonna or hyoscyamus, as correctives.

Pharmacology

Purgen Now Being Exploited in this Country.

The physicians of the United States are receiving a neat package containing samples of a German proprietary—Purgen. The container is an ingenious one and, besides the tablets, includes a circular in English, although mailed in Europe, describing the remarkable virtues of this "new synthetic aperient." It has been considered strange that this proprietary, which has been advertised so thoroughly in Europe, Australia, etc., should not have made its appearance in this country. Now it is here, and it is well that physicians should know what Purgen is and not be mystified or misled by the literature that they may receive regarding the preparation.

The following appeared in THE JOURNAL, Jan. 5, 1907, page 64, and is reprinted now as being especially timely:

The report of a case of poisoning by purgen (phenolophthalein) is the occasion for some pertinent observations by Dr. G. Brasch as to the proper introduction of such remedies to the medical profession (*Zeitschrift für Medizinalbeamte*, Abst. in *Apotheker-Zeitung*, No. 59, 1906). He agrees with Best that all such remedies should first receive a thorough trial in an institution subject to state supervision, before they are advertised to the medical profession, so that their harmlessness in appropriate doses may be ascertained by a method free from liability to error. The manner in which the manufacturers introduced purgen to the profession and to the laity is to be condemned, and probably led to the symptoms of poisoning exhibited in the case of Dr. Best and tends to discredit a remedy which is harmless and efficient if used in proper doses. The manufacturer of such a preparation is inclined, for obvious reasons, to put the dose of his preparation much too high. The most important point, however, is the objectionable character of the names given to such articles. The organic compound phenolophthalein has been known for a long time and has been widely used as an indicator. Accidentally it was discovered that phenolophthalein possessed laxative properties and thereon it was proposed (1901) as a medicine under the name "purgen." It is sold in tablets containing 0.05, 0.1 and 0.5 grain phenolphthalein mixed with sugar and flavored with vanilla. The author says: "But it is very desirable—and I regard this as the most important part of my communication—that phenolphthalein should be received into the materia medica under its own name. The addition of vanilla and sugar and the designation as 'purgen' by the manufacturers is to the highest degree superfluous and the arbitrary dosage in three strengths with the ridiculous designations 'baby,' 'for adults,' 'for patients confined to bed,' are merely calculated to prejudice the physician who is accustomed to individualize in his prescriptions, against a remedy which is in itself an excellent one."

As explanatory to the last sentence, it should be stated that in Europe purgen is put up in three dosage forms, "infant purgen for children," containing ¾ of a grain; "adult purgen for chronic constipation," containing 1½ grains, and "strong purgen for invalids," containing 7½ grains. The form in which it is being sampled in this country is in the medium dose, 1½ grains.

Physcians should remember that the promoters of purgen are simply introducing a chemical well known to laboratory workers for the last twenty years, which has been recognized as an aperient for at least seven years, and which can be purchased for 40 cents an ounce, whereas an ounce of phenolphthalein in the form of purgen will cost $3.20 wholesale. The enthusiastic praise of the remedy, found in the advertising circulars, should be subjected to critical judgment on account of its source and motives.

It is undoubtedly true, however, as we have previously stated, that phenolphthalein is worthy of a trial. In the *British Medical Journal*, Oct. 18, 1902, F. W. Tunnicliffe speaks of the virtues of phenolphthalein, and the conclusions reached by him were that it is a useful aperient, without irritating action on the kidneys, and is especially valuable in jaundice, its depressing action on the circulation being less than sulphate of magnesia.

Phenolphthalein is not in the Pharmacopeia, but has been included in "New and Non-Official Remedies" by the Council on Pharmacy and Chemistry. From this we quote:

Actions and Uses.—Phenolphthalein acts as a purgative, but appears to possess no further physiologic action. A case of poisoning from taking 1 gm. (15 grains) is reported.

Dosage.—For adults the average dose is 0.1 to 0.2 gm. (1.5 to 3 grains) given as powder, in cachets, capsules or pills. It may be given with safety in doses of 0.5 gm. (8 grains), and these doses seem to be necessary to secure its effects in bedridden patients or in obstinate cases.

We have gone into this matter again so that our readers may have some knowledge of this remedy, and we hope that if they conclude to try it they will use the chemical itself and under its own name.

Correspondence

The Cause of the Nostrum Evil as Seen by a Recent Graduate.

HUNTSVILLE, UTAH, Aug. 25, 1907.

To the Editor:—The growth of the nostrum evil is due either to a defect in the education of the physician or else to carelessness and neglect on his part. To-day a large proportion of the young men just out of medical college can not write half a dozen correct prescriptions; that branch of their education has been woefully neglected.

The detail man from the proprietary house is one of the first visitors to the young physician's office. Before he has been practicing many months he has received enough samples to cure, if the literature which accompanies them is to be believed, all the diseases he is liable ever to be called on to treat. The practitioner who uses such therapeutic agents does not prescribe, he dispenses; the proprietary manufacturer prescribes and the physician becomes the dispensing agent for the manufacturer.

The name on the prescription for proprietary remedies is usually a catchy and easily remembered one; the patient is very liable to receive the preparation in the original bottle together with its "cure-all" label and circular. When another member of the family is taken sick with a disease symptomatically similar to the one previously prescribed for, the physician is not called, but another bottle in the "original package" is purchased at the drug store and self-medication is established. Many nostrum manufacturers after thoroughly introducing their preparations to the medical profession and receiving testimonials from physicians, begin to advertise them on a large scale to the public. The older men in the profession are in no small part to blame for this state of affairs. The recent graduate is surprised to find the more experienced men believing that a certain antiseptic powder is a more powerful germicide than any drug in his therapeutic armamentarium, that another nostrum is the safest and surest hypnotic he has at his command, and that one of the rankest acetanilid preparations is the safest of coal-tar derivatives. Two examples that came under my observation are as follows: One physician prescribed "anurep," a transposition of the letters of the nostrum peruna; another prescribed "Syrupus Winsli" for Winslow's soothing syrup. Can one imagine a physician with an adequate knowledge of therapeutics going to such extremes? My experience in the first two years of practice is probably no different from that of others: I received 307 samples and nineteen pounds of literature from proprietary houses. So long as the proprietary manufacturers continue to be as aggressive as they now are, and the teaching of therapeutics in medical colleges remains as indifferent as it now is, can we expect different results?

W. J. BROWNING, M.D.

The Preparation of the Specialist.

IOWA CITY, IOWA, Sept. 5, 1907.

To the Editor:—I have read with interest the note of Dr. Frank in THE JOURNAL, Aug. 31, 1907, referring especially to Dr. Shambaugh's article on "The Preparation of the Specialist." Both the articles furnish much food for thought and I believe that it would be well if our higher educational institutions would take cognizance of the sentiments expressed. Dr. Frank

says: "Where is the university which offers courses toward the Ph.D. degree for investigations in internal medicine, in diseases of the eye, ear, nose or throat, or diseases of the nervous system, or even pathology?" The graduate college of the University of Iowa recognizes that the work done in various department of the College of Medicine is of such a character as to warrant the college offering courses leading to the degrees of M.S. and Ph.D. Since 1900 various departments of the medical college have offered courses leading to the degrees mentioned. A number of the M.S. degrees have already been given; as yet no Ph.D. degrees have been granted.

Again, Dr. Frank asks the question: "Is it justifiable that the possession of an academic degree be absolutely necessary before a man may engage on the work for his Ph.D.?" I believe that many of us will agree with the doctor when he states: "It is far better that he hold one; but it is wrong to make it absolute."

It will be of interest to know that a few years ago the board of regents of the University of Iowa voted that the degree of M.S. (master of science, in medicine), may be granted to any one holding the degree of M.D. even though he does not hold an academic degree; provided, of course, that he does the prescribed amount of work, which is the same whether the applicant holds or does not hold the baccalaureate degree. This is like placing the baccalaureate degree and the medical degree, so far as educational requirements are concerned, on a par. With the present-day requirements of a one or two years' course, as a necessary preliminary for entrance on a medical course, it will not be long before the medical degree will be placed above the baccalaureate degree. Considering this in connection with the tendency of the present day to place the study and practice of medicine on an exact scientific basis, it seems that the contention made in the article quoted, viz., that certain changes in regard to the relation between medical studies and advanced degrees should be made, is entirely justifiable.

J. R. GUTHRIE.

Accident with Therapeutic Electric Lamp.

ELMHURST, ILL., Sept. 6, 1907.

To the Editor:—I wish to report a mishap which occurred during the use of a therapeutic lamp. The lamp used was a small portable one. While administering a treatment over the abdomen, for a diffuse peritonitis, without any known cause the globe exploded, severely frightening and burning the patient.

The therapeutic lamp is frequently used about the face in the treament of boils, infections, eczema, neuralgia, enlarged glands, etc. Since the incandescent globe may explode, light and heat should be administered through a different medium.

HENRY F. LANGHORST, M.D.

Book Notices

THE ESSENTIAL SIMILARITY of Innocent and Malignant Tumors. A Study of Tumor Growth. By Charles W. Cathcart, M.A., M.B., etc., Surgeon Royal Infirmary, Edinburgh. Illustrated. Cloth. Pp. 79. Price, $2.50. New York: William Wood & Co., 1907.

This monograph is devoted to a description of specimens and cases illustrating the fact that there is no sharp line separating malignant from benign tumors. Much valuable information bearing on this point is collected in this book from the author's experience with museum collections. It is illustrated by numerous photographs, some of which are good. Why writers will waste money and good white paper publishing photomicrographs which show, at least in the reproductions, nothing but a mass of blurred splotches which mean nothing or next to nothing, even to a trained pathologist, has always been an irritating incomprehensibility to the reviewer! There are numerous citations from the literature which illustrate various features of the relationship between benign and malignant growths, but no comprehensive bibliography has been accumulated. The author's conclusion that innocent and malignant tumors are similar to one another in their nature and mode of growth will find few opponents, if any, among modern pathologists. We can particularly commend the discussion of the interesting variations in malignancy exhibited by giant-cell sarcoma of bone.

ABDOMINAL PAIN, Its Causes and Clinical Significance. By A. E. Maylard, M.B., B.S. Second Edition, revised. Cloth. pp. 301. Price, $2.50 net. Philadelphia: P. Blakiston's Son & Company, 1906.

Endeavoring to put the clinician's estimate of pain as a subjective symptom on a scientific basis, Maylard, already well known for his work on the "Surgery of the Alimentary Canal," in 1905 issued the book of which the second and revised edition is now before us. The appearance of the second edition so soon after the publication of the first is evidence of the appreciation by the profession of the value of the work. The whole work has undergone revision. Instead of certain matter on abdominal operations, which appeared in the first edition, there have been inserted chapters on abdominal neuroses and postoperative pain, constituting a valuable addition to the work and putting its entire text into harmony with its title.

INFECTIOUS AND PARASITIC DISEASES, Their Cause and Manner of Transmission. By Millard Langfeld, A.B., M.B. (Johns Hopkins); Professor of Bacteriology and Clinical Medicine, Creighton Medical College, Omaha. With an Introduction by L. F. Barker, Professor of Medicine, Johns Hopkins University. Illustrated. Cloth. Pp. 260. Price, $1.25 net. Philadelphia: P. Blakiston's Son & Co., 1907.

According to the author, this book was written primarily for the use of nurses, but its scope has been enlarged so that it serves admirably for the use of such persons as are interested in bacteriology, but lack training in this subject. The text is simple and clear, and the author has avoided the use of terms and the discussion of questions which would be unintelligible to beginners. It is doubtful whether the book can be used as a text-book for the medical student, although the chapter on the collection and examination of secretions and excretions is very explicit, and can not fail to be of service.

Miscellany

Eleventh International Anti-Alcoholic Congress at Stockholm.

These congresses began over a quarter of a century ago, and for many years were confined largely to temperance reformers and philanthropists. During the last ten years, at the Paris and Budapest meetings, the scientific side of the subject has come into great prominence. We are indebted to Dr. T. D. Crothers, Hartford, Conn., for a report of the eleventh congress, recently held at Stockholm. The proceedings were divided into three distinct sections, scientific, sociologic and popular.

Dr. Delbruck of Bremen, Germany, in a paper on "The Medicinal Value of Alcohol," concluded that its stimulating properties were delusional, that its only value was that of a narcotic. Other speakers followed, showing its limited value as a drug, and its exceeding danger as a beverage. Dr. Forel of Switzerland discussed at some length the "Influence of Alcohol in Sexual Life and Human Productiveness," showing by statistics that drinking parents are always followed by degenerate and imperfect progeny. "Alcohol and Criminality" was the subject of several papers, all showing its intimate connection with crime and pauperism. Professor Hartman of Leipzig pointed out the evils and dangers from alcohol in student life. He showed from statistics that the use of beer and spirits was dangerous to all forms of study and culture. The subject of heredity was treated by a number of very exhaustive papers, giving statistics of school children and others, who were considered degenerate from moderate and excessive drinking parents. Dr. MacNicholl of New York contributed an excellent paper on this topic.

Another subject discussed by both physicians and laymen was "The Influence of Alcohol in the Production of Railway and Other Accidents." Reference was made to a recent paper on this subject by Dr. H. O. Marcy of Boston and its statements confirmed in a most flattering way. Army surgeons and military men expressed the conclusion that alcohol is an evil that must be eradicated before the full efficiency of armies can be obtained. Several eminent physicians proved con-

clusively that total abstinence should be insisted on by all life insurance companies as a matter of economy, and that no moderate drinker should be insured except on extra hazardous rates. On the accountability of alcoholics there seemed to be a wide difference of opinion.

In the popular section the Gothenburg system was discussed and the different methods of treating alcoholics, the value of society movements and the influence of papers, tracts and the recent bill-poster crusade which began in Paris a few years ago and has now extended to England. Interesting papers and discussions pointing out the value of public teachings of the evils of alcohol were read. On the question of institutional treatment of inebriates, Dr. Crothers gave a history of the movement in America and Dr. Ellsworth spoke of the first institution in the world and its growth and progress.

A number of continental physicians and the president of the University at St. Petersburg, Russia, described the efforts being made in different countries, all referring to America as having been the pioneer in this field. Resolutions were passed requesting that some American delegate present an exhaustive historical paper on this subject at the next congress.

"Alcohol as a Nutrient" was the subject of nearly two hours' discussion by a number of physicians and physiologists, with most elaborate tables, charts and drawings. The general conclusion was that its nutrient properties were very doubtful, and so far could not be sustained by the best modern research.

In another section some very strong papers were presented on the duty of the press to do everything possible to educate the public concerning the evils of alcohol. In this connection it will be interesting to note that in the exhibit room in the congress buildings were copies of eleven hundred papers published throughout the world, devoted to the temperance cause. It was a curious fact that a great majority of these papers were published in the wine and beer-drinking countries of Europe. It was interesting to note that of temperance periodicals the United States and Canada furnished less than one hundred, Great Britain and the Colonies less than a hundred, Russia about thirty and Continental Europe the balance. These periodicals impress one very vividly with the magnitude of the movement against alcohol as a beverage.

In one room there was a somewhat startling exhibit of flaming advertisements that were posted on the bill boards in France and England. These advertisements consisted of statements and exclamations regarding the ill effects of alcohol, published in colors so as to attract attention. Most of them were quotations from medical men and some of them were very startling in their graphic presentation. This new crusade has not reached this country yet.

There were fifteen hundred persons registered as members of the congress. Over four hundred were physicians, teachers, scientists and persons interested in the hygienic and sociologic aspects of the subject. The congress was one of the most significant gatherings of the year, and shows a growing appreciation of the importance of the alcohol question, especially in the great wine-drinking countries of Europe. The congress attracted the attention of the press, which published long accounts of the transactions and gave some of the papers in full.

A bureau was organized, with Dr. Hercord of Zurich, Switzerland, as secretary, for the collection and dissemination of all papers having scientific interest on this subject. Many of these papers will appear in the German and English magazines in the near future.

Rate at which Physicians Speak.—Mr. William Whitford, Chicago, who was elected president of the National Shorthand Reporters' Association at the ninth annual meeting, held at Biltmore, near Asheville, N. C., August 6-9, read a paper embodying twenty years of observation and researches on the rate of public speaking. The list of speakers includes noted preachers, university professors, lawyers, dentists and physicians. Following is a tabulated record of some of the physicians Whitford has reported, the number of times he has reported them, the lengths of the speeches and the average speed per minute:

PHYSICIANS AND SURGEONS.

Speaker.	Number of takes.	Length of takes. Minutes.	Average speed per minute.	Total average.
W. W. Keen	3	5, 10, 15	122, 142, 136	133½
Jos. D. Bryant	2	5, 10	140, 132	136
Robert T. Morris	3	10, 15, 20	135, 122, 128	128½
Maurice H. Richardson.	2	10, 5	135, 146	140½
Samuel J. Mixter	2	5, 10	138, 126	132
Henry O. Marcy	2	10, 20	142, 156	149
Wm. B. Coley	3	5, 10, 20	168, 148, 149	155
Herman J. Boldt	4	10, 5, 10, 20	116, 126, 128, 126	124
James M. Baldy	3	10, 5, 15	172, 182, 165	173
Philander A. Harris	2	10, 5	138, 146	142
Edward J. Ill	2	5, 10	120, 116	118
Willis F. Westmoreland	2	30, 10	136, 128	132
J. B. S. Holmes	2	10, 5	132, 146	139
Howard A. Kelly	4	10, 5, 10, 15	164, 152, 146, 148	152½
J. M. T. Finney	2	10, 15	136, 142	139
Wm. H. Welch	2	20, 10	165, 164	164½
Frank Billings	3	15, 10, 5	128, 132, 146	135½
James B. Herrick	2	35, 10	132, 146	139
Robert B. Preble	2	10, 5	148, 164	156
Arthur R. Elliott	2	10, 15	146, 138	142
Geo. W. Webster	2	5, 10	138, 128	133
A. J. Ochsner	4	5, 10, 15, 5	106, 92, 86, 98	95½
D. A. K. Steele	2	10, 5	146, 162	144
Wm. E. Quine	4	10, 15, 5, 50	120, 122, 130, 132	126
G. Frank Lydston	2	10, 20	142, 156	149
J. Henry Carstens	4	10, 15, 10, 10	152, 162, 170, 146	157½
H. O. Walker	2	10, 5	136, 132	134
Victor C. Vaughan	3	5, 10, 10	134, 145, 137	138⅘
Daniel R. Brower	3	10, 15, 30	126, 128, 136	130
Nicholas Senn	4	10, 50, 10, 100	164, 162, 161, 156	160¾
Joseph M. Mathews	4	10, 15, 10, 5	126, 122, 130, 128	126½
George Ben Johnson	2	10, 15	122, 118	120
F. W. McRae	3	10, 5, 10	132, 136, 124	134
W. E. B. Davis	2	10, 10	132, 126	129
Chas. A. L. Reed	3	10, 10, 20	135, 142, 128	138⅓
Arthur Dean Bevan	3	50, 50, 10	126, 122, 138	128⅘
T. J. Happel	3	10, 10, 5	135, 142, 152	143
Richard Douglas	2	10, 15	138, 142	140
Henry M. Lyman	2	40, 15	161, 146	153½
James F. Baldwin	3	15, 10, 15	165, 148, 142	151⅔
John B. Murphy	3	15, 10, 10	160, 138, 148	148⅔
A. M. Cartledge	3	10, 5, 10	165, 180, 172	172⅓
Harold N. Moyer	3	10, 5, 10	136, 132, 135	134⅓
Frederick Montizambert	2	15, 10	138, 127	132½
Walter Wyman	2	10, 15	132, 140	136
Weller Van Hook	2	10, 10	136, 142	129
Charles T. Parkes	4	50, 50, 50, 50	175, 165, 172, 176	172
Wm. A. Evans	2	10, 10	134, 138	136
James F. W. Ross	2	10, 15	142, 128	135
Hugh T. Patrick	2	10, 20	142, 146	144
R. M. Cunningham	2	15, 49	138, 146	142
D. N. Eisendrath	2	10, 15	164, 158	161
Joseph Eastman	1	15	138	138
Mathew D. Mann	2	15, 10	142, 138	140
M. L. Harris	3	10, 5, 10	122, 136, 128	128⅔

DISTINGUISHED BRITISH PHYSICIANS AND SURGEONS.

Sir Victor Horsley	2	20, 10	146, 138	142
Sir Andrew Clark	2	10, 20	126, 138	132
Sir Wm. Broadbent	2	10, 15	128, 136	132
Sir T. Granger Stewart	1	20	136	136
Lawson Tait	2	10, 15	152, 139	145½
Sir Wm. Macewen	2	20, 15	135, 142	138½
Ernest Hart	2	40, 10	126, 132	128⅔

Old Bottles and the Public Health.—The National Glass Bottle Workers' Trade Union, says the *Lancet* (London), sent a deputation to the president of the Local Government Board to call his attention to the indiscriminate manner in which old bottles are utilized to the danger of the public health. The spokesman pointed out that these old bottles are frequently collected from ashpits and other receptacles for rubbish and sold for use after being imperfectly washed out with hot water. It was further stated that many of these bottles come from places where infectious disease exists, and that they afford a possible channel for its dissemination. It was urged that some system of sterilization should be enforced in the case of such bottles before they are allowed to be sold and used again. Mr. Burns replied that he was in sympathy with the object of the deputation and promised to give his careful attention to the possibility of carrying out the practical suggestion placed before him. It is only necessary to reach this protest, says the *Lancet*, to be in accord with it: there is no doubt that the practice complained of may well be a source of infection. We should like to think that no one purchasing such bottles would fill them with any liquid for public consumption without first satisfying himself of their cleanliness.

but unfortunately our experience of other unchecked industrial processes, as witness the use of loathsome bed stuffing, does not make us too sanguine in the matter. It is surely not too much to demand that these old bottles should undergo a prolonged and efficient scalding either at the hands of the sellers or the buyers before being refilled, and we trust that official action will be taken to secure this or some equally precautionary measure. The National Glass Bottle Workers' Trade Union, even though its action was undertaken with one eye to its own interests and one eye to the public's, has done good service in calling attention to the matter.

Vital Statistics of Ceylon.—The *Journal of Tropical Medicine*, August 1, gives some interesting information regarding Ceylon. The statistics quoted are those given by Dr. A. J. Chalmers, in his inaugural address to the Ceylon branch of the British Medical Association. The difference between the town and country death rates for infants is most marked in the municipality of Colombo, where it amounts to 395 per 1,000, while in the country districts it is but 149 per 1,000. The prevalence of diarrhea and dysentery indicate the need of better water and better sanitation. Ankylostomiasis probably causes many more deaths per annum than is realized, while faulty diagnosis may be ascribing more deaths to this cause than really occur. The increase in the number of cases of phthisis and its importance to the community are emphasized. Attention is directed to the high death rate of women in childbirth, and Chalmers considers that this should be diminished by the trained midwives who are being distributed over the island. Malaria causes a great deal of illness, but has a comparatively low death rate. Leprosy, while not a frequent causes of death, is prevalent in the island. There is an unknown number of lepers in their own homes. Old age, according to the statistics, causes 2.1 per cent. of the mortality, and this, the *Journal of Tropical Medicine* says, is satisfactory, if true. It is noted that the more healthy the province the greater the number of people who die of old age.

Yeast in Furunculosis.—Aronstam (*Medical Fortnightly*) confirms the statement that baker's yeast is occasionally of signal service in furuncles. It should be administered in one-half dram doses three hours after meals, just at the time when the food has undergone chylification in the small intestines. This remedy, he asserts, is especially indicated when indican is detected in the urine of patients afflicted with repeated outbreaks of this affection.

Superalimentation in Phthisis.—It is well and good to feed tuberculous patients abundantly; but I question the wisdom of excessive overfeeding, which so often causes the patient great distress and produces a sense of disgust for any kind of food. We should be guided in directing dietetic treatment by the patient's digestive and assimilative powers. . . . Let us never forget that an increase of adipose without concomitant improvement of pulmonary lesions is of little value.—Knopf.

Marriages

F. L. CORSON, M.D., to Miss Metta Hunt, both of Shawnee, Okla., August 21.

WILLIAM A. TEVELUWE, M.D., to Miss Martha Scheve, both of Cincinnati, August 28.

ERWIN C. GARBER, M.D., to Miss Ella Mae O'Neil, both of Dunkirk, Ind., August 26.

CHARLES E. THOMPSON, M.D., to Miss Katherine McMillan, both of Cincinnati, August 29.

CLAY W. WEIMER, M.D., Shamokin, Pa., to Miss Janet Hicks of Harrisburg, Pa., September 4.

STANLEY R. PERKINS, M.D., Mishawaka, Ind., to Miss Cora Etta Hill of Chicago, September 11.

WILBUR G. RUBLE, M.D., to Miss Ethel Lynn Murphey, both of Morristown, Tenn., September 4.

HARRY R. FOLCKEMER, M.D., Bowen, Ill., to Miss Nell E. Byers of Dallas City, Ill., August 22.

THOMAS EVANS, M.D., JR., to Miss Helen Foster Harrison, both of Pittsburg, Pa., September 14.

GEORGE A. MCLANE, M.D., Walworth, Wis., to Miss Agnes Mahoney of Elkhorn, Wis., August 28.

HARRY EDWARD PURCELL, M.D., Madison, Wis., to Miss Susan Prindiville of Chicago, September 12.

WALTER WELLMAN GRAVES, M.D., La Salle, Ill., to Miss Clara Belle Cavell of Mendota, Ill., September 2.

ROBERT H. HAYES, M.D., Brockton, Mass., to Miss Gertrude A. Luce of New Vineyard, Maine, September 4.

CHARLES J. SORSEN, M.D., Calumet, Mich., to Miss Jerski Lang of Finland, in London, England, August 26.

WILLIAM BEVERLEY MASON, M.D., Washington, D. C., to Miss Agnes Gray Kennedy at Warren, Va., August 20.

CLARK BARROWS HATCH, M.D., Newark, Ohio, to Miss Esabel Martin of The Pines, Franklin County, Ohio, September 11.

J. LIVINGSTON PITMAN, M.D., Orange, N. J., to Miss Rita Simpson Murphy of Springfield, Mass., September 4.

CAPT. GEORGE MACY EKWURZEL, assistant surgeon, U. S. Army, to Miss Lucile Thorpe of Philadelphia, at Lead, S. D., August 10.

JOSEPH M. BOYER, M.D., Springfield, Mass., to Miss Seraphine Cecilia Le Tourneau of Hartford, Conn., at Marlboro, Mass., September 11.

Deaths

Charles Franklin Branch, M.D. University of Vermont, College of Medicine, Burlington, 1879; a member of the Massachusetts Medical Society and of the Hampshire County Medical Society; a veteran of the Civil War; surgeon general of Vermont from 1886 to 1888; United States pension examiner; professor of hygiene in the University of Vermont; department commander of Vermont, G. A. R., in 1894, and in 1895 president of the Vermont State Medical Society; for the last 11 years a practitioner of Amherst, Mass., and medical examiner for the district; died at his home in Amherst, August 27, from nephritis, aged 61.

Michael Beshoar, M.D. University of Michigan, Department of Medicine and Surgery, 1853; a member of the Colorado State and Las Animas County medical societies; formerly president of the Southern Colorado Medical Association; surgeon and medical director in the Confederate service during the Civil War, and acting assistant surgeon in the United States Army; formerly a member of the Colorado State Board of Health and superintendent of schools of Las Animas County; founder of the Pueblo *Chieftain* and Trinidad *Advertiser*, died at his home in Trinidad, September 5, aged 74.

James Crerar Dunn, M.D. Jefferson Medical College, Philadelphia, 1871; a member of the American Medical Association; formerly professor of dermatology and materia medica and therapeutics in the Medical Department of Western University of Pennsylvania, Pittsburg; for 10 years physician at St. Francis Hospital, and for eight years assistant physician to the West Penn Hospital, and for a number of years president of the Pittsburg board of health; a noted specialist in diseases of the skin; died at his home in Pittsburg, September 3, aged 59.

Nathaniel Wilbur Webber, M.D. Chicago Medical College, 1866; hospital steward and later assistant surgeon and surgeon to the Third Colorado Volunteer Infantry during the Civil War; professor of anatomy and later of gynecology in the Detroit College of Medicine; for one year county physician of Cook County, Illinois; and in 1866 physician in charge of the Cholera Hospital, Chicago, during the epidemic; formerly health officer of Detroit; died at Grace Hospital in that city, August 30, after an illness of six weeks, aged 67.

Robert Bruce Smith, M.D. Long Island College Hospital, Brooklyn, 1866; of Tioga, Pa.; a member of the Medical Society of the State of Pennsylvania and Tioga County Medical Society; a veteran of the Civil War; for three years president of the Tioga County board of pension examiners; died suddenly, August 23, from heart disease, at the home of his daughter, in New Haven, Conn., aged 67.

Lansing B. Winne, M.D. College of Physicians and Surgeons in the City of New York, 1878; a member of the medical societies of the State of New York and Albany County; who is said to have been suffering some time from mental trouble; was found dead in the chapel adjoining Holy Innocents Episcopal church, Albany, September 2, from gunshot wound of the head, supposed to have been self-inflicted, aged 51.

Carl A. Klemer, M.D. University of Minnesota, College of Medicine and Surgery, Minneapolis, 1904; of Minot, N. D.; a member of the North Dakota Medical Association, Northwest District Medical Society and Ward County Medical Society; formerly an interne at the Luther Hospital, St. Paul, Minn.; died in Berlin, Germany, where he was taking postgraduate work, August 22, aged 26.

Gaylord Parsons Clark, M.D. College of Medicine, Syracuse (N. Y.) University, 1880; a member of the American Medical Association, American Physiological Society and American Microscopical Society; dean of the College of Medicine, Syracuse University, and a member of its faculty for 27 years; died suddenly at his home in Syracuse, September 1, from acute gastritis, aged 50.

Charles J. Sorsen, M.D. Rush Medical College, Chicago, 1898; of Calumet, Mich.; founder and proprietor of the Northern Michigan Hospital, Laurium, which was afterward known as Dr. Sorsen's private hospital; a member of the Michigan State and Houghton County medical societies; who was married in London, Eng., August 26, died in that city, September 1, from heart disease, aged 37.

Henry O'Donnell, M.D. Bellevue Hospital Medical College, New York City, 1891; of Ellsworth, Kan.; surgeon general of that state in 1895 and 1896; representative in the legislature from Ellsworth County in 1905 and 1906; who took a principal part in the compilation of the present medical practice act of Kansas; died in St. Margaret's Hospital, Kansas City, Kan., August 23, aged 41.

Albert Benedict Lyman, M.D. *magna cum laude* University of Giessen, Germany, 1874; a member of the Medical Society of University College, London, Eng.; a surgeon in the Red Cross service during the Franco-Prussian War; physician in charge of the Southern Dispensary, Baltimore; died at his home in that city, from diabetes, August 29, after a short illness, aged 61.

Augustus Coe Van Duyn, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1862; contract surgeon and surgeon of volunteers in the Army during the Civil War; assistant surgeon at Fort Leavenworth, Kan., in 1892, and for four years coroner of Leavenworth County; died at his home in Kansas City, Mo., August 28, from dropsy, aged 74.

George H. Cannon, M.D. University of Louisville (Ky.) Medical Department, 1897; a member of the American Medical Association, and a prominent practitioner of New Albany, Ind.; died at his home in that city, August 28, from intestinal obstruction, after an illness of eight days, aged 55. The Floyd County Medical Society attended his funeral in a body.

Edward J. Messemer, M.D. New York University Medical College, New York City, 1871; of New York City; a member of the medical societies of the state and county of New York, the New York Neurological Society and German Medical Society; for many years attending physician at the Mount Sinai Hospital; died in Marburg, Germany, August 5.

George Waldron, M.D. University of Buffalo (N. Y.) Medical Department, 1881; of Rochester, N. Y.; a member of the Medical Society of the State of New York and Monroe Medical Society; was instantly killed in a collision between an automobile which he was driving and a trolley car near Canandaigua, N. Y., August 28.

Samuel C. Henszey, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1870; for more than 30 years a practitioner of West Philadelphia; physician for many years to the Home for Aged and Infirm Colored People; died at the home of his son, in West Philadelphia, August 25, from senile debility, aged 78.

John T. Sutphen, M.D. Hahnemann Medical College and Hospital, Philadelphia, 1871; for four years surgeon of the Fourth Infantry, Ohio National Guard, and for many years health officer and a member of the board of education of Middletown, Ohio; died at the home of his mother in that city, August 29, aged 57.

John Wesley Drake, M.D. Hospital College of Medicine, Louisville, 1881; of Louisville, Ky.; a member of the Kentucky State Medical Association and Jefferson County Medical Society; once a member of the city council; died August 31, from acute gastritis, at the Deaconess Hospital, Louisville, aged 53.

Andrew J. Alleman, M.D. New York University Medical College, 1854; of McDougall, N. Y.; a life-long resident of Seneca County, N. Y., and for half a century a practitioner of West Fayette; died at the Geneva City Hospital, August 29, from shock following a surgical operation, aged 78.

Koert D. Hawley, M.D. Medical College of Ohio, Medical Department, University of Cincinnati, 1866; a veteran of the Civil War; for many years a practitioner of Columbus, Ind.; died at his home in Indianapolis, August 28, from anemia, after an illness of nine months, aged 66.

Frank H. Moyer, M.D. University of Buffalo, Medical Department, 1872; a member of the Medical Society of the State of New York, and Livingston County Medical Society; died at his home in Moscow, August 28, after a prolonged period of invalidism, from paralysis, aged 60.

Richard Botsford, M.D. University of Vermont, College of Medicine, Burlington, 1898; of Lake City, Iowa; a member of the Iowa State and Calhoun County medical societies; died at the City Hospital, Fort Dodge, Iowa, August 30, a few hours after an operation for cholelithiasis, aged 33.

Frank T. Gaffney, M.D. Yale University, Medical Department, New Haven, Conn., 1905; house surgeon in Long Island City Hospital; died at the home of his father in Meriden, Conn., August 23, from disease of the liver and heart, after an illness of three months, aged 26.

Bernard Zweighaft, M.D. University of Pennsylvania, Department of Medicine, 1891; a member of the American Medical Association and a prominent practitioner of New York City; died suddenly, from heart disease, at Kennebunk Beach, Maine, September 3, aged 41.

Franklin L. Green, M.D. University of Michigan, Department of Medicine and Surgery, Ann Arbor, 1869; police magistrate of Kangley, Ill., and a member of the board of education for that school district; died suddenly at his home, August 26, from heart disease, aged 67.

William Davison, M.D. University of Maryland School of Medicine, Baltimore, 1876; a member of the Medical Society of Virginia and the Frederick County Medical Society; for many years justice of the peace; died at his home in Middletown, Va., September 1, aged 58.

John N. Coons, M.D. Denver and Gross College of Medicine, Medical Department, University of Colorado, 1904; formerly a practitioner of Brush, Colo., died at his home near West Grove, Iowa, August 27, from tuberculosis, after a long illness, aged 28.

Arthur Clay Blain, M.D. College of Physicians and Surgeons in the City of New York, 1888; formerly president of the Macon (Ga.) Medical Society, died at his home in Brunswick, Ga., August 28, from nephritis, after an illness of two years, aged 40.

William Gutch, M.D. Western Reserve University Medical College, Cleveland, 1855; senior member of the Monroe County (Iowa) Medical Society; died at his home in Albia, August 24, from disease of the stomach, after an illness of nine days; aged 83.

John B. Hawes, M.D. Georgetown University School of Medicine, Washington, D. C., 1886; United States consul at Reichenberg, Bohemia, and thereafter a practitioner of Ithaca, N. Y., from 1886 to 1894; died at his home in Denver, August 20, aged 51.

George S. McGhie, M.D. Faculty of Medicine of Queens University and Royal College of Physicians and Surgeons, Kingston, Ontario; died at his home in Elgin, Ont., August 24, from nephritis, after an illness of a few days, aged 47.

Robert Cochran Beatty, M.D. College of Physicians and Surgeons, Baltimore, 1882; a member of the American Medical Association, and for 15 years a practitioner of Pittsburg, Pa.; died at his home in that city, August 25, aged 51.

William P. Chalmers, M.D. University of California, Medical Department, San Francisco, 1886; at one time state quarantine officer and chief sanitary inspector of San Francisco; died recently, and was buried at San Mateo, August 24.

Milton S. Richards, M.D. Jefferson Medical College, Philadelphia, 1867; justice of the peace of Maxatawny Township, Pa., for 15 years; died at his home in Maxatawny, August 24, from dropsy, after a long illness, aged 63.

James E. Lindsey, M.D. University of Louisville, Medical Department, 1882; formerly a practitioner of Haskell, Abilene and Rule, Texas; died at the home of his son-in-law in Haskell, August 24, from heart disease, aged 59.

Edward Cuyler Bunker, M.D. Eclectic Medical Institute, Cincinnati, 1853; a veteran of the Mexican War; died at his home near Greensburg, Ind., August 27, after an illness of several weeks, aged 86.

William A. Rocap, M.D. Jefferson Medical College, Philadelphia, 1888; a member of the American Medical Association;

died at his home in Olney, Philadelphia, August 29, from diabetes, aged 38.

Martin Duke Hendricks, M.D. Medical Department, University of Nashville, Tenn., 1904; of Westdale, La., is reported to have been killed by falling from a train in Arkansas, August 30, aged 34.

John Redmon Awbrey, M.D. University of Louisville, Medical Department, 1875; died at his home in Louisville, August 30, from kidney disease, after an illness of three years, aged 76.

Samuel J. Martin, M.D. Eclectic Medical College of Philadelphia; a practitioner of Racine, Wis., for more than 50 years; died in California, during a surgical operation, September 4, aged 76.

Katherine Parsons, M.D. Cleveland Homeopathic Medical College, 1873; died at her home in Cleveland, September 3, from cerebral hemorrhage, after an illness of several weeks, aged 75.

Patrick E. Maley, M.D. Cincinnati College of Medicine and Surgery, 1862; formerly coroner of Hamilton County, Ohio, and a practitioner of Cincinnati; died in Chicago, July 22.

Joseph C. Thomas, M.D. Bennett College of Eclectic Medicine and Surgery, Chicago, 1886; died at his home in Cincinnati, August 15, from senile debility, aged 82.

James Franklin Price, M.D. University of Pennsylvania, Department of Medicine, Philadelphia, 1882; died at his home in Six-mile Run, Pa., June 13, aged 43.

George H. Kemp, M.D. University of Wooster, Medical Department, Cleveland, 1870; died at his home in Barnesville, Ohio, August 31, aged 65.

Mary Mitchell Stokes, M.D. Hahnemann Medical College and Hospital of Chicago, 1896; died at her home in Rockford, Ill., June 26, aged 37.

Gilbert B. Trublood (Years of Practice, Illinois, 1878); formerly of Hurricane, Ill.; died at his home in Granite, Idaho, May 8, aged 70.

Charles Louis Frankel, M.D. St. Louis College of Physicians and Surgeons, 1892; died at his home in Boston, August 27, aged 41.

William E. Johnson (Registration, Monmouth Co., N. J.); formerly of Keyport, N. J.; died suddenly August 26, in Ontario.

J. P. Legg (License Tenn., 1889); of Morristown, Tenn., died August 28, aged 72.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

ETIQUETTE IN CASE OF SUBSTITUTE ATTENDANT.

MEMPHIS, TENN., Aug. 26, 1907.

To the Editor:—Will you kindly decide a question as to ethics in the following case? Dr. A is engaged to attend a patient during her confinement, but, while he is out of the city, labor comes on sooner than the expected time. Dr. A's wife rings up Dr. B and asks him to attend the case. On the third day after the birth of the child, Dr. A returns to the city; does not notify Dr. B he has returned, but goes to see the patient, finds a temperature of 101.6, says things look bad, leaves a prescription and says he will take charge of the case. The family tell him that Dr. B is in charge and he and the family both ring up Dr. B, who meets Dr. A at the house in less than an hour. He takes the patient's temperature with A's thermometer and finds it 100.4 and says that he does not see anything to be alarmed about. Now, on Dr. B entering the room, A said: "Here is B now. Which one of us do you want?" The family selected B without giving him a chance to resign in A's favor. A shows he is angry; says he did not propose to give up to B, as it is his case, and B can not wait on them unless he (A) permits him to. B requests A to leave the room with him and not to discuss the case in the patient's presence, as she is considerably excited. B then calls the father into the next room with A and tells him it is A's case, but they still say they don't want A. B then says he can not see to the case without A's consent and will have to resign in his favor. The father then asks B if he would not continue if they should discharge A; or, rather, if he would come back in the case if they should discharge A. He replies that he would rather not, but as the woman must have attention, he supposes that he would have to do it for humanity's sake, if requested, even if it were against professional ethics. Now, the questions are these:

1. Should B have retired from the case after A asked the family to choose and they selected B, or after A had asked them to choose their attendant, should he have retired?

2. Did not A do wrong in discussiong the case in front of the patient?

(3) Whose should be the fee, the attendant B or the one engaged for the case, A?

(4) Was not A wrong in telling the family things were looking bad without first notifying B? The next day the temperature was 99.4, when A withdrew from the case. This was on the fourth day.

Kindly express your opinion on this case. H. S. WOLFF.

ANSWER: Basing our judgment on the facts as stated, we answer:

1. B was entitled to remain in charge of the case after the family, at the request of A, had expressed their preference for B over A. The right of a person to choose his own physician, as also to change his physician, with or without good reason, as often as he pleases, can not be gainsaid. The duty of every physician toward a fellow practitioner is limited to the avoidance of everything in word or deed that might act as a suggestion to the patient or the patient's friends to change physicians; and, in the event that the motives for a proposed change seem trivial and inadequate or based on misapprehension, to endeavor to protect a professional brother from adverse action due to ignorance by explaining the actual facts to the patient. A should have retired when, the family having been asked to choose their attendant, they chose B.

2. A should certainly not have discussed the case in front of the patient. Such a course could effect no possible good, and might be prejudicial to the patient, whose interests should ever be paramount in the physician's mind.

3. This is a matter of custom which varies with locality. The ideal course, and one adopted in many places, is that when one physician attends in a case on behalf of another who was either engaged or previously in charge, the fee should be paid to the latter, leaving it to the decision of the latter, in the absence of any agreement between them on the subject, to decide whether all, or what portion of the fee should be given to the physician who actually attended. This is not a commercial transaction, but is an instance of that fraternal feeling that is one of the essential distinguishing marks between the respective ideals of a profession and a trade. Theoretically, the service in such a case was rendered by B not on behalf of the patient, but of A. It was, therefore, for A to claim the fee and to make a suitable recognition to B for his friendly assistance.

4. A was certainly to blame for telling the family that things were looking bad, without previously discussing the matter with B, who might have supplied information that would have prevented A's making a mistake. The subsequent course of the case seems to show that there was no occasion for the remark.

TREATMENT OF GOITER.

ELYRIA, OHIO, Aug. 24, 1907.

To the Editor:—1. Is Beebe's serum ever used for simple goiter? 2. Is thyroidectin (P., D. & Co.) ever used for simple goiter? 3. Is there any treatment (besides surgical) that will reduce the size of a simple goiter? Patient has tried iodin and says she took "thyroids" for six months without effect. 4. Does the administration of thyroid extract ever cause a simple goiter to decrease in size? H. M. METCALF, M.D.

ANSWER.—1. No. Since the serum treatment for exophthalmic goiter is based on a theory of autotoxemia, there is no reason to expect it to apply to simple goiter. 2. So far as we know, thyroidectin has not been used for simple goiter, its use being confined to Graves' disease. 3. Various treatments have been suggested, and good results have been claimed for them, but the reports have been conflicting. An ointment of iodin and potassium iodid rubbed into the goiter, with exposure of the skin for a short time to direct sunlight, has been lauded and good results have been reported. Care must be taken that the exposure to the sun is not continued long enough to produce severe burning of the skin. Iodin with potassium iodid, introduced by cataphoresis, has also been highly spoken of. 4. Osborne (THE JOURNAL, Nov. 3, 1906, p. 1476), considers that thyroid extract will often do harm in ordinary goiter by stimulating the gland to increased secretion and perhaps causing the exophthalmic form to develop from the simple goiter. If the goiter consists largely of cystic degeneration, small doses of thyroid may be physiologic, while large doses have, in some instances, caused the goiter to decrease in size, but this can be effected as well and more safely with iodid. In the discussion on Osborne's paper above referred to, Dr. John Rogers spoke positively on the fact of exophthalmic goiter following on thyroid feeding in simple goiter. If thyroid is used, it should be remembered that cerebral excitement, palpitation, loss of weight, sweatings and flushings are contraindications, while a slow pulse and a gain of weight, combined with a drowsy, apathetic condition indicate a possibility that benefit may ensue. Attention is directed to the following articles: Preparation of a Serum for Treatment of Exoph-

thalmic Goiter, Beebe, THE JOURNAL, Feb. 17, 1906, p. 484. Treatment of Exophthalmic Goiter by Specific Serum, Rogers, THE JOURNAL, Feb. 17, 1906, p. 487. Treatment of Thyroidism by Specific Serum, Rogers, THE JOURNAL, Sept. 1, 1906, p. 655. Serum Having Therapeutic Value in the Treatment of Exophthalmic Goiter, Beebe, THE JOURNAL, Sept. 1, 1906, p. 661. Therapeutic Uses of Thyroid Preparations, O. T. Osborne, THE JOURNAL, Nov. 3, 1906, p. 1475. See also answer to correspondent, THE JOURNAL, Feb. 9, 1907, p. 538. Several other papers on the subject will shortly appear in THE JOURNAL.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Sept. 7, 1907:

Snoddy, C. A., asst.-surg., sick leave further extended one month.

Byrne, C. B., asst.-surg. gen., is assigned to temporary duty in Washington, D. C., for a period not to exceed ten days, for consultation with the Surgeon General of the Army, and on completion of this duty will proceed to Governor's Island, as heretofore ordered.

Vedder, E. B., asst.-surg., ordered to proceed from Fort Walla Walla, Wash., to Rockford, Wash., for duty with squadron, Fourteenth Cavalry, on practice march.

Fife, J. D., asst.-surg., will repair to this city and report to the Adjutant General of the Army, and will then proceed to Fort De Soto, Fla., and thence to Jackson Barracks, La., for the purpose of instructing medical officers and members of the Hospital Corps at those posts in the methods of making identification records.

Cowper, H. W., asst.-surg., leave of absence extended two months.

Whitmore, E. R., asst.-surg., left Fort Riley, Kan., on thirty days' leave of absence.

Halloran, P. S., asst.-surg., leave of absence extended to include Sept. 23, 1907.

Whitmore, E. R., Krebs, L. L. R., and Halloran, P. S., asst.-surgs., ordered to report in person to the commanding officer of the Eighteenth Infantry, Fort Leavenworth, Kan., to accompany that regiment to the Philippine Islands, and on arrival at Manila will report in person to the commanding general, Philippines Division, as heretofore ordered.

Wells, F. M., cont. surg., arrived at Fort Leavenworth, Kan., for temporary duty.

Kierulff, H. N., cont. surg., granted leave of absence for one month and relieved from duty in Philippines Division.

Hasseltine, H. E., cont. surg., left Camp Perry, Ohio, with Third Battalion, Fourth Infantry, en route to Fort Thomas, Ky.

Wade, W. H., cont. surg., returned to duty at Fort D. A. Russell, Wyo., from leave of absence.

Dickenson, C. F., cont. surg., relieved from duty in Philippines Division, and on expiration of present leave of absence will proceed to Presidio of San Francisco for duty.

Cullen, C. W., cont. surg., will proceed from Fort Sam Houston, Texas, to Fort Logan H. Roots, Ark., for temporary duty.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, for the week ending Sept. 7, 1907:

Surgeon E. J. Grow, detached from duty at the naval hospital, Washington, D. C., and ordered to the bureau of medicine and surgery, Navy Department.

Medical Director W. G. Farwell, retired, detached from duty at the Navy recruiting station, Philadelphia, and ordered home.

Assistant Surgeon H. Butts, detached from the *Maryland* and ordered to the naval station, Cavite, P. I.

Medical Director T. H. Streets, ordered to additional duty as a member of the naval retiring board, Washington, D. C.

Medical Director W. A. McClurg, detached from the marine barracks, Washington, D. C., and ordered to duty as president of the naval examining and medical examining boards, Washington, D. C.

Surgeon C. D. Langhorne, detached from the navy yard, Washington, D. C., and ordered to the marine barracks, Washington, D. C.

Surgeon C. J. Decker, having been examined and found incapacitated for active service on account of disability incident thereto by a retiring board, is retired from active service, from Aug. 31, 1907, under the provisions of section 1453, Revised Statutes.

Assistant Surgeon C. G. Alderman, detached from the naval hospital, Puget Sound, Wash., September 15, and ordered to the naval medical school, Washington, D. C., October 1, for instruction.

Assistant Surgeon F. X. Koltes, detached from the naval hospital, Mare Island, Cal., September 15, and ordered to the naval medical school, Washington, D. C., October 1, for instruction.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and noncommissioned officers of the Public Health and Marine-Hospital Service for the seven days ended Sept. 4, 1907:

White, J. H., surgeon, granted leave of absence for one month from Aug. 29, 1907.

Sweet, E. A., asst.-surg., directed to proceed to El Paso, Texas, for special temporary duty, on completion of which to rejoin his station at Fort Stanton, N. M.

Ashford, F. A., asst.-surg., granted leave of absence for seven days from Sept. 6, 1907.

Tappan, J. W., acting asst.-surg., directed to proceed along Mexican border from Brownsville, Texas, to Nogales, Ariz., on special temporary duty, on completion of which to rejoin his station at El Paso, Texas.

CASUALTY.

Acting Assistant Surgeon A. C. Blain died at Brunswick, Ga., Aug. 28, 1907.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Sept. 6, 1907:

SMALLPOX—UNITED STATES.

California: General, July 1-31, 2 deaths.
Colorado: Colorado Springs, June 1-30, 2 cases.
Illinois: Winslow, July 1-August 3, 25 cases.
Iowa: Ottumwa, August 18-24, 1 case.
Louisiana: New Orleans, August 18-24, 2 cases.
Michigan: Saginaw, August 18-24, 3 cases.
New Jersey: Newark, August 18-24, 2 cases.
South Dakota: Sioux Falls, August 18-24, 1 case.
Wisconsin: Milwaukee, August 4-10, 11 cases.

SMALLPOX FOREIGN.

Algiers: Algeria, July 1-31, 5 deaths.
Austria: Galicia, July 18-August 3, 1 case; Vienna, August 2-10, 3 cases, 1 death.
Brazil: Para, June 28-August 17, 40 cases, 14 deaths.
Canada: Halifax, August 18-24, 1 case.
Chile: Iquique, July 16-21, present.
China: Chefoo, July 1-27, 1 case; Hongkong, June 23-July 6, 6 cases, 5 deaths.
France: Marseilles, July 1-31, 98 deaths; Paris, August 11-17, 19 cases, 5 deaths.
Great Britain: London, August 4-10, 1 case.
India: Calcutta, July 14-20, 4 deaths.
Italy: General, August 13-19, 7 cases; Genoa, July 1-31, 2 cases; Naples, August 11-17, 1 case, 1 death; Turin, August 5-11, 1 case.
Java: Batavia, July 7-20, 7 cases.
Madeira: Funchal, August 12-18, 10 cases, 2 deaths.
Mexico: Aguas Calientes, August 18-24, 2 deaths; Mexico City, July 1-3, 18 deaths.
Portugal: Lisbon, August 4-10, 4 cases.
Russia: Odessa, July 28-August 3, 2 cases; Warsaw, July 28-August 3, 4 deaths.
Spain: Malaga, July 1-31, 6 deaths; Valencia, August 6-18, 31 cases, 5 deaths.
Turkey in Asia: Bassorah, July 27, present.
Turkey in Europe: Constantinople, August 5-11, 3 deaths.

CHOLERA.

India: Calcutta, July 14-20, 38 deaths; Cochin, July 6-19, 13 deaths; Madras, July 20-26, 2 deaths; Rangoon, July 14-20, 1 death.
Russia: Astrachan, August 8-14, present; Saratoff, August 5-14, present.
Straits Settlements: Singapore, June 30-July 13, 4 deaths.

YELLOW FEVER.

Brazil: Para, July 28-August 17, 9 cases, 8 deaths.
Cuba: Cienfuegos, August 14-20, 12 cases, 5 deaths; Campo Florida, August 28, 1 case; Habana, August 30, 1 case.
Ecuador: Guayaquil, August 4-10, 1 death.

PLAGUE.

Argentina: Cordoba, June 4, present.
China: Amoy, July 20-27, 1 case, 1 death; Foo-Choo, July 20-27, present; Hongkong, June 22-July 6, 45 cases, 46 deaths.
Egypt: Alexandria, August 2-15, 22 cases, 16 deaths; Port Said, August 2-15, 1 case, 1 death; Province of Behera, August 2-15, 3 cases, 1 death.
French Indo-China: Saigon, July 12-16, 10 cases, 10 deaths.
India: General, July 14-20, 3,411 cases, 2,760 deaths; Calcutta, July 14-20, 11 deaths.
Japan: Yokahama, July 9-13, 2 cases, 2 deaths.
Madagascar: Majunga, August 26, present.
Peru: Callao, July 25-August 7, 1 case, 1 death; Chosica, July 25-31, 1 case; Ferrenhafe, July 18-24, 1 case; Lima, July 18-31, 5 cases, 3 deaths; Puira, July 25-August 7, 5 cases, 1 death; Quenocotillo, July 25-August 7, 1 case; Trujillo, July 18-August 7, 21 cases, 15 deaths.
Straits Settlements: Singapore, July 6, 1 case, 1 death.

PLAGUE—UNITED STATES.

California: San Francisco, August 30-September 12, 7 cases, 1 death (total from August 14 to September 4, 17 cases and 7 deaths).

Association News

NEW MEMBERS.

List of new members of the American Medical Association for the month of August, 1907:

ALABAMA.

Bancroft, J. D., East Lake.
Comer, R. T., Birmingham.
Greil, G. J., Montgomery.
Jerigan, C. H., Birmingham.
Martin, H. L., Avondale.
Smith, R. A., Nadawah.
Staples, J. G., Birmingham.
Wynne, W. H. Ensley.

ARKANSAS.

Arnold, W. E., Prescott.
Didier, F. W., Fourche.
Chastain, J. B., Prescott.
McCray, E. H., Malvern.
Sylar, T. B., Hollygrove.

CALIFORNIA.

Beebe, J. L., Anaheim.
Dukes, C. A., Oakland.
Musser, F. R., Oakland.
Ragan, D. F., San Francisco.
Ray, D. F., Stockton.
Strong, D. C., San Bernardino.

CONNECTICUT.

Deming, D. B., Waterbury.
White, B. W., Bridgeport.

DELAWARE.

Vaughan, E. M., Middletown.

FLORIDA.

Wilcox, C. R., Clearwater.

IDAHO.

Dunlap, R. E., Mohler.

ILLINOIS.

Boddiger, C. E., Chicago.
Cleverdon, Ernest, Chicago.
Cottral, G. H., Hanover.
Estes, R. L., Meredosia.

Kiser, Chas. R., Madison.
Lincoln, Mary C., Chicago.
Munsell, W. W., Urbana.
Nelson, N. C., Chicago.
Van Kirk, F. W., Chicago.
Vail, Ruth, Chicago.

INDIANA.

Willis, J. H., Evansville.

INDIAN TERRITORY.

Ivie, C. W., Bokoshe.
Shackelford, C. E. Ardmore.
Waters, G. A., Lenapah.

IOWA.

Garland, H. S., Oskaloosa.
Negus, Alvah, Keswick.
Netolicky, Wesley, Cedar Rapids.
Steelsmith, D. C., Melvin.

KANSAS.

Haas, A. R., Ellinwood.

KENTUCKY.

Ewing, W. M., Smith's Grove.
Hamlitt, G. A., Paducah.
Sory, J. D., Madisonville.
Vance, C. A., Lexington.
Weathers, E. W., Elkton.

LOUISIANA.

Lloyd, T. P., Shreveport.
Polk, W. T., Alexandria.
Pope, B. A., New Orleans.

MAINE.

Haney, O. E., Boothbay Harbor.
O'Connor, J. M., Biddeford.

MARYLAND.

Coggins, J. C., Laurel.
Stubbs, W. P., Baltimore.
Foutz, C. R., Westminster.
Rench, V. B., Baltimore.
Willis, Mary C., Baltimore.
Hopkins, W. H., Annapolis.

MASSACHUSETTS.

Boothby, W. M., Boston.
Carley, F. J., New Bedford.
Harris, W. D., Lynn.
Hoit, H. A., Holden.
Kirkpatrick, G. H., Lynn.
Shotswell, J. A., Beverly.

MICHIGAN.

Manwaring, J. G. R., Flint.
Smithers, Frank, Ann Arbor.
Whiteside, J. W., Ironwood.

MINNESOTA.

Armstrong, J. M., St. Paul.
Boyer, S. H., Duluth.
Cleveland, H. E., Osakis.
Holbrook, J. S., Mankato.
Kelly, T. C., Mankato.
Macnie, J. S., Minneapolis.
Morrison, W. R., Bemidji.

MISSOURI.

Donnell, R. E., DeSoto.
Griffith, A. C., Kansas City.
Knox, A. C., Kansas City.
Marchildon, J. W., St. Louis.
McAmis, L. C., St. Louis.
Millican, K. W., St. Louis.
Rogers, F. B., Kansas City.
Rogers, J. C., Kansas City.
Wilson, C. A., St. Louis.

MISSISSIPPI.

Reid, H. P., Penalara.
Thomas, S. S., Maben.

NEBRASKA.

Pedersen, H. C., Farwell.

NEW JERSEY.

Maas, M. A., Newark.
McClendon, C. P., Paterson.

NEW MEXICO.

Kaser, W. E., East Las Vegas.
McClanahan, R. K., East Las Vegas.

NEW YORK.

Benedict, W. G., Cameron.
Denyor, T. L., Syracuse.
Echeverria, M. J., New York City.
Farrell, T. H., Utica.
Frost, C. A., Utica.
Harper, W. F., New York City.
Hubbell, H. H., Corning.
Hull, T. A., Troy.
Hutchinson, H. F., Hulburton.
Jackson, Meyer, New York City.
Kobler, E. W., New York City.
Kellogg, W. C., Syracuse.
Kreuder, Henry, New York City.
MacMillan, I. T., New York City.
Mallett, G. H., New York City.
Mooney, H. W., New York City.
Neumann, W. F., New York City.
Rome, R. M., Brooklyn.
Ryder, G. H., New York City.
Ryon, W. G., Ogdensburg.
Taylor, J. M., Brooklyn.
Tucker, C. F., Syracuse.
Witherspoon, C. R., Rochester.

NORTH CAROLINA.

Misenheimer, C. A., Charlotte.
Ringer, P. H., Asheville.

NORTH DAKOTA.

Godfrey, W. H., Russell.

OHIO.

Albers, H. W., Cincinnati.
Casto, F. M., Cleveland.
Clark, H. B., Columbus.
Firmin, J. M. Findlay.
Furrer, A. F., Cleveland.
Jump, J. S., Tiffin.
Lawlor, R. J., Cleveland.
McKinniss, C. R., Columbus.
Miller, J. H., Wauseon.
Varnum, J. H., Benton Ridge.
Willson, C. H., Idaho.

OKLAHOMA.

Stinson, J. E., Chickasha.

PENNSYLVANIA.

Bird, G. C., Philadelphia.
Brav, Aaron, Philadelphia.
Dean, A. H., Scranton.
Farquhar, D. C., Monessen.
Hargett, W. S., Philadelphia.
McGinty, E. F., Pittston.
Nisbet, Verner, Philadelphia.
Patterson, B. H., Wilkinsburg.
Rowand, A. H. C., Philadelphia.
Snively, A. F., Philadelphia.
Starkey, F. R., Philadelphia.
Wirts, C. W., Allegheny.
Zimlick, A. J., Philadelphia.

SOUTH DAKOTA.

McCauley, C. E., Aberdeen.
Walker, F. E., Hot Springs.

TENNESSEE.

Ferguson, L. F., Nutbush.

TEXAS.

Agee, W. A., Fairy.
Armstrong, A. M., Crawford.
Armstrong, Marvin, Merkel.
Atkinson, W. H., Killeen.
Baldwin, J. G., Honey Grove.
Bourland, F. M., Houston.
Campbell, W. E., Crowley.
Cocke, R., Marshall.
Compton, W. J., Crawford.
Conwally, W. A., Pendletonville.
Ellis, J. W., Lampasas.
Fisher, W. C., Galveston.
Fountain, W. D., Corsicana.
Glass, J. T., Clifton.
Grant, J. H., Ballinger.
Harris, B. A., Boyd.
Hobdy, Will, Hamilton.
Johnson, J. C., Richmond.
Marshall, O. R., Meridian.
McCelvey, J. S., Temple.
Mügge, O. J., Cuero.
O'Farrell, J. M., Richmond.
Redford, W. E., Boyd.
Standifer, T. E., Clarendon.
Stoops, J. N., Estacado.
Thornton, C. W., Dalhart.
Tottenham, J. W., Jr., Brownwood.
Winn, J. B., Hamilton.
Witte, W. S., Waco.
Wysong, J. H., Hico.

UTAH.

Browning, W. J., Huntsville.

VERMONT.

Elliott, H. A., Barnet.

VIRGINIA.

Gannaway, W. L., Abingdon.
James, R. B., Danville.
Scott, R. H., Richmond.

WASHINGTON.

Ganson, Lee, Odessa.
Underwood, F. R., Seattle.

WEST VIRGINIA.

Morris, J. S., Charleston.

WISCONSIN.

Gates, Eugene, Two Rivers.
Lockhart, C. W., Mellen.
Montgomery, Wm. Eau Claire.
Saucier, J. T. O., Bruce.
Shehan, L. B., Superior.
Wenzel, J. V., Ashland.
Williams, H. H., Sparta.

Medical Education and State Boards of Registration

COMING EXAMINATIONS.

IOWA State Board of Medical Examiners, Capitol Building, Des Moines, September 17-19. Secretary, Dr. Louis A. Thomas, Des Moines.

COLORADO State Board of Medical Examiners, 1723 Tremont St., Denver, October 1. Secretary, Dr. S. D. Van Meter, Denver.

IDAHO State Board of Medical Examiners, Capitol Building, Boise, October 1. Secretary, Dr. W. F. Howard, Pocatello.

MINNESOTA State Board of Medical Examiners, Old Capitol, St. Paul, October 1. Secretary, Dr. W. S. Fullerton, St. Paul.

MONTANA Board of Medical Examiners, The Capitol, Helena, October 1. Secretary, Dr. W. C. Riddell, Helena.

NORTH DAKOTA State Board of Medical Examiners, Grand Forks, October 1-3. Secretary, Dr. H. M. Wheeler, Grand Forks.

NEW YORK State Board of Medical Examiners, Albany, October 1-4. Chief of Examining Division, Charles F. Wheelock, Albany.

INDIAN TERRITORY, Western District Board of Medical Examiners, Muskogee, October 7. Secretary, Dr. M. F. Williams, Muskogee.

UTAH State Board of Medical Examiners, Salt Lake City, October 7-8. Secretary, Dr. R. W. Fisher, Salt Lake City.

ARKANSAS State Board of Medical Examiners, State Capitol Building, Little Rock, October 8. Secretary Dr. F. T. Murphy, Brinkley.

ARKANSAS Homeopathic Board of Medical Examiners, Little Rock, October 8. Secretary, Dr. V. H. Hallman, Hot Springs.

GEORGIA Board of Medical Examiners (Regular), Capitol Building, Atlanta, October 8. Secretary, Dr. E. R. Anthony, Griffin.

MICHIGAN State Board of Registration in Medicine, Lansing, October 8. Secretary, Dr. B. D. Harison, 205 Whitney Building, Detroit.

MISSISSIPPI State Board of Health, Jackson, October 8. Secretary, Dr. J. F. Hunter, Jackson.

WYOMING State Board of Medical Examiners, Laramie, October 9. Secretary, Dr. S. B. Miller, Laramie.

RHODE ISLAND State Board of Health, Room 313, State House, Providence, October 10-11. Secretary, Dr. Gardner T. Swarts, Providence.

DISTRICT OF COLUMBIA Board of Medical Supervisors, Law School of Georgetown University, Washington, October 10-14. Secretary, Dr. Geo. C. Ober, Washington.

GEORGIA Board of Eclectic Medical Examiners, Senate Chamber, Atlanta, about October 15. Secretary, Dr. C. H. Field, Marietta.

INDIANA Board of Medical Registration and Examination, Indianapolis, October 22-24. Secretary, Dr. W. T. Gott, Crawfordsville.

ILLINOIS State Board of Health, Great Northern Hotel, Chicago, October 23-25. Secretary, Dr. J. A. Egan, Springfield.

Rules Governing Examinations in Mississippi.—Dr. J. F. Hunter, secretary of the Mississippi State Board of Health, sends us the following list of rules governing examinations for license to practice medicine in that state:

1. The statute of the State of Mississippi requires of applicants to practice medicine, an examination on the following branches: Anatomy, physiology, chemistry, obstetrics, surgery, materia medica, hygiene and pathology.

2. Eight questions shall be given on each of the above branches.

3. The questions on each branch shall be given the applicant at the beginning of the examination and the applicant shall have until 10 o'clock p. m. of the day given to answer them.

4. No applicant shall withdraw himself from the presence of the examiners during his examination without permission. For cause an applicant may withdraw temporarily, but shall be accompanied in such retirement by a member of the examining board.

5. No applicant shall communicate in any way with any other applicant, nor have books or helps of any kind.

6. A correct set of answers to the questions propounded on a subject shall entitle the applicant to the full mark for that subject, viz.: 100 points, each full and correct answer rating 12½ points. Partial or imperfect answers shall be rated by the examiners in accordance with their degree of fulness and correctness.

7. A general average of not less than 75 of a possible 100 points shall entitle the applicant to a license to practice medicine in this state, provided that he has otherwise complied with the law.

8. The examiners shall not know the name of the applicant whose paper they are grading, nor the school he attended.

9. No applicant shall take from the room a copy of the examination questions.

10. The names of the applicants who fail before this board, as well as the names of those who pass, shall be given out for publication with the names of the medical colleges of which they are graduates. No member of the board shall be permitted to tell an applicant the result of his examination until after the adjournment of the board.

11. After examination papers have been handed in by the applicant, they shall be held as the property of the board and shall not be given out to the applicant nor to any other person.

12. The handwriting of the applicant must be legible.

13. Any applicant violating any of the above rules may be dismissed from the room or have his paper for the entire work canceled.

14. The secretary shall give the applicant the number of his application and the applicant shall place this number at the head of each sheet of his paper and not write his name thereon.

Oregon January Report.—Dr. Byron E. Miller, secretary of the Oregon Board of Medical Examiners, reports the written examination held at Portland, Jan. 8-10, 1907. The number of subjects examined in was 15; percentage required to pass, 75. The total number of candidates examined was 36, of whom 23 passed and 13 failed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Medical Coll. of Georgia	(1902)	76
Northwestern Univ. Med. School	(1884)	77
Rush Med. Coll.	(1899) 75; (1904) 84; (1904)	80
College of P. and S., Chicago	(1899)	83
Keokuk Med. Coll.	(1902)*	
Kentucky School of Med.	(1896)	78
Harvard Med. School	(1905)	81, 86
University of Michigan	(1896), 78; (1906)	77
Washington University, St. Louis	(1887)*	
Lincoln Med. Coll.	(1903)	78
Toledo Med. Coll.	(1898)	75.
Willamette University	(1906) 75,	79, 80
University of Oregon	(1906)	82
Jefferson Med. Coll., Philadelphia	(1906)	83
Temple Coll. of Med.	(1905)	83
Imperial Alexander University, Finland	(1903)*	
Victoria College, Toronto	(1867)	78

FAILED.

College of P. and S., San Francisco	(1898)	72
Bennett Coll. of Ecl. Med. and Surg.	(1906)	58, 68
American Med. Miss. Coll.	(1899)	68
University of Iowa, Homeo. Dept.	(1891)	74
Kentucky School of Med.	(1886)	57
Barnes Med. Coll.	(1906)	74
Ensworth-Central Med. Coll.	(1906)	64
University of Oregon	(1906)	61, 70
Willamette University	(1905)	53
University of Vermont	(1905)	58
Laval University, Montreal	(1904)	63

* Percentage not given.

Oregon May Report.—Dr. Byron E. Miller, secretary of the Board of Medical Examiners of the State of Oregon, reports the written examination held at Portland May 8-10, 1907. The number of subjects examined in was 15; percentage required to pass, 75. The total number of candidates examined was 55, of whom 25 passed and 30 failed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Georgetown University	(1905)	78.
Colorado School of Medicine	(1904)	77.3
Rush Medical College	(1900)	75.8
College of P. and S., Kansas City	(1897)	76.8
Kentucky School of Medicine	(1902)	75.4
Baltimore University	(1897)	75.
Omaha Medical College	(1882)	75.
University of Oregon	(1890) 76.3; (1907) 75.1, 75.2, 75.7, 75.9, 75.9, 76.4, 76.8, 77.7, 80.6, 81.5, 82.5, 89.6.	
Willamette University	(1907) 75,	75.9, 80.3
Hahnemann Med. Coll., Philadelphia	(1879)	75.
Trinity Medical College, Ontario	(1895)	79.4

FAILED.

College of P. and S., Chicago	(1906)	68.8
American Medical Miss. College	(1899)	72.7
American Coll. of Med. and Surg., Chicago	(1904)	62.8
University Med. Coll., Kansas City	(1904) 64.8; (1906)	74.4
University of Minnesota	(1901)	71.8
Willamette University	(1904) 55.5; (1906) 59; (1907) 64.5, 65.8, 67.4, 67.8, 67.8, 67.8, 68.3, 70.2, 70.3, 70.8, 71.5, 72.3, 73.4, 73.5.	
University of Oregon	(1906) 64.2, 67.2; (1907) 73.5, 74.3, 74.3, 74.8	
Western University, London, Ont.	(1894)	66.1
University of Vermont	(1905)	58.5

Arkansas July Report.—Dr. F. T. Murphy, secretary of the State Medical Board of the Arkansas Medical Society, reports the written examination held at Little Rock, July 9, 1907. The total number of subjects examined in was 7; total number of questions asked; 65; percentage required to pass, 75. The total number of candidates examined was 35, of whom 15 passed, including 6 non-graduates, and 20 failed, including 10 non-graduates. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Arkansas University	(1907)	86.2
Northwestern Univ. Med. School	(1907)	84.4
University of Louisville	(1907)	85.8
Washington University, St. Louis	(1907)	90.1
Jefferson Medical College, Philadelphia	(1877)	80.4
Vanderbilt University	(1907)	86.7
Memphis Hospital Medical College	(1907)	88.2
University of Nashville	(1901)	76.5
University of Virginia	(1902)	76.5

FAILED.

Barnes Medical College	(1907)	70.7
Meharry Medical College	(1907) 63.7, 65.4,	73, 73.2
University of Tennessee	(1903)	50
University of West Tennessee	(1907)	41.7, 49.5
Memphis Hospital Medical College	(1907)	58.1
College of P. and S., Memphis	(1907)	64.8

LICENSED WITHOUT EXAMINATION.

There were also licensed at this examination three old practitioners, who were granted license by reason of having been registered under old law. The following colleges were represented:

College.	Year of Grad.
Arkansas University	(1897)
University of Louisville	(1897)
University of Tennessee	(1891)

Michigan Reciprocity Report.—Dr. B. D. Harison, secretary of the Michigan State Board of Registration in Medicine, sends us the following list of reciprocal licenses issued by that board from Jan. 1 to Aug. 1, 1907, inclusive:

LICENSED THROUGH RECIPROCITY.

College.	Year Grad.	Reciprocity with.
Medical College of Georgia	(1905)	Georgia
American Coll. of Med. and Surg., Chicago	(2, 1906)	Illinois
Hering Medical College	(1906)	Illinois
Rush Medical College	(1894) (1906)	Illinois
Chicago Homeopathic Medical College	(1887)	Ohio
Chicago Homeopathic Medical College	(1904)	Indiana
Dunham Med. College	(1902)	S. Carolina
College of P. and S., Chicago	(1901)	Indiana
College of P. and S., Chicago	(4, 1906)	Illinois
College of P. and S., Chicago	(1907)	Missouri
Northwestern Univ. Med. School	(1906)	Illinois
Hahnemann Medical College, Chicago	(1906)	Texas
Illinois Med. College	(1903)	Illinois
Bennett Coll. of Ecl. Med. and Surg.	(1907)	Illinois
College of P. and S., Keokuk	(1878)	Iowa
University of Iowa	(1887)	Iowa
Keokuk Medical College	(1904)	Iowa
Louisville Medical College	(1899)	Kentucky
Johns Hopkins Medical School	(1906)	Maryland
Baltimore Medical College	(1895)	Ohio
Baltimore Medical College	(1906)	Indiana
Michigan College of Medicine and Surgery	(1895)	Nebraska
University of Michigan	(1866)	Ohio
University of Michigan	(1891)	New York
University of Michigan	(1900)	Iowa
Ensworth-Central Medical College	(1901)	Kansas
Homeopathic Medical College of Missouri	(1881)	Maine
Eclectic Med. University Kansas City	(1906)	Missouri
University Med. Coll., Kansas City	(1903)	Missouri
University of Buffalo	(1903)	New York
College of P. and S., New York	(1904)	New York
University and Bellevue Hosp. Med. Coll.	(1905)	Maine
Albany Medical College	(1896)	New York
Miami Medical College	(1896)	Ohio
Western Reserve University	(1896)	Ohio
Starling Medical College	(1898)	Ohio
Cincinnati Coll. of Med. and Surg.	(1885)	Ohio
Toledo Medical College	(1896)	Ohio
University of Wooster, Medical Dept.*	(1893)	Ohio
Cleveland Homeo. Med. College	(1905)	Ohio
Hahnemann Med. Coll., Philadelphia	(1907)	Maryland
University of Vermont	(1906)	Vermont
Wisconsin Coll. of P. and S.	(1902)	Wisconsin
Laval University, Quebec	(1890)	Wisconsin
Royal Hungarian University	(1887)	Missouri

*In 1896 this school united with Cleveland College of Physicians and Surgeons to form the Medical Department of the Ohio Wesleyan University.

Vermont July Report.—Dr. W. Scott Nay, secretary of the Vermont State Board of Medical Registration, reports the written examination held at Burlington, July 9-11, 1907. The number of subjects examined in was 13; total number of questions asked, 95; percentage required to pass, 75. The total number of candidates examined was 38, of whom 32 passed and 6 failed. The following colleges were represented:

PASSED.

College.	Year Grad.	Per Cent.
Baltimore Med. Coll.	(1905) 81.7; (1907)	85.8
College of P. and S., Boston	(1906)	83.9
Dartmouth Med. Coll.	(1903)	75.1
Hahnemann Med. Coll., Philadelphia	(1898) 82.1; (1905)	82.5
Jefferson Med. Coll.	(1906) 85.8; (1907) 82,	84.7
College of P. and S., New York	(1907)	80.1
University of Vermont	(1903) 85; (1905) 75.1; (1906) 84.8; (1907) 76, 76.1, 77.6, 77.9, 78.3, 78.4, 78.8, 79.2, 79.3, 79.6, 80.1, 81.1, 81.4, 82, 82.1, 84.6, 84.8, 85.3, 86.1.	

FAILED.

University of Maryland	(1906)	71.9
University of Vermont	(1907) 72.3, 73.1,	73.9, 74
Queen's University, Ontario	(1906)	68.4

The following questions were asked:

ANATOMY.

1. Describe the femur. 2. Describe the radiocarpal articulation. 3. Name the extensor muscles of the thigh, and describe any one of them. 4. Give the origin, course, and distribution of the renal arteries. 5. Give the origin, course, and termination of the saphenous veins. 6. Describe the fourth ventricle. 7. Give the origin, course, and distribution of the great sciatic nerve. 8. Give the gross anatomy of the lungs. 9. Describe the inguinal canal, and name the coverings from without inward, of an oblique inguinal hernia. 10. Describe the mammary glands.

BACTERIOLOGY.

1. Name and describe the two most common pyogenic organisms. 2. What is a pure culture? State how a pure culture is made.

3. Describe toxins, antitoxins, and ptomains. 4. Discuss pathologic conditions produced by the colon bacillus. 5. Give a reliable method of cultivating and staining the bacillus of diphtheria.

PHYSIOLOGY.

1. Describe protoplasm. 2. What are the functions of epithelium? 3. Give the varieties of muscle tissues, and give example of each. 4. What conditions retard the coagulation of the blood? 5. Describe normal heart sounds. How and where should the stethoscope or ear be placed to hear these sounds to best advantage? 6. Give the characteristics of the secretions of the parotid, submaxillary, and sublingual glands. 7. How many types of glands in the small intestines? Name them. 8. What nerves are distributed to the lung tissue? 9. Discuss the function of the tenth nerve. 10. Give the physiology of menstruation, and describe the menopause.

HYGIENE.

1. How should a patient who has been rendered unconscious by heat be treated? 2. Mention some of the remote consequences of epidemic influenza on public health. 3. What are the diseases the predisposition to which is greatly increased by the continual use of alcoholics? 4. What physical training would you recommend for persons with weak respiration. 5. Describe the effects of a hot and moist atmosphere on the human system, and state the class of disease this atmosphere is likely to induce.

PATHOLOGY.

1. What may be the results of hemorrhage? 2. In what seats may calcification take place in disease? 3. Give the distribution of the typhoid bacillus. 4. Give the pathologic anatomy in contracted kidney. 5. What is the pathology of cretinism?

CHEMISTRY.

1. What is allotropy? In what elements is it exhibited? 2. Describe three elements belonging to the nitrogen group. 3. Describe the properties of ozone. At what time of year is it most abundant in the air? 4. Give an explanation of the processes of fermentation and putrefaction. 5. State important differences in composition of human and cow's milk. Describe in detail tests for albumin in urine.

OBSTETRICS.

1. a. Describe briefly the bony pelvis, giving the important diameters. b. Give method of computing time of labor. 2. Give etiology and treatment of albuminuria of pregnancy. 3. Give diagnosis of breech presentation and management of same. 4. Describe management of a normal R. O. A. presentation. 5. Give causes and treatment of retained placenta. 6. Give indications for podalic version and describe operation. 7. Give prophylactic and curative treatment of ophthalmia neonatorum. 8. Define puerperal sepsis and give prophylaxis. 9. Give directions for the preparation of a patient at the onset of labor. 10. Name four conditions calling for the application of forceps and describe mode of application.

GYNECOLOGY.

1. Define subinvolution and give causes. 2. State what you would expect to determine by a digital examination. 3. a. Enumerate the most common symptoms arising from a lacerated cervix. b. Describe operation for lacerated cervix. 4. Give diagnosis and treatment of uterine fibroids. 5. Give etiology and treatment of: a. Dysmenorrhea. b. Menorrhagia.

THERAPY.

1. In what diseased conditions would you prescribe: cocain, chloral, quinin, belladonna. 2. Write a formula for the following diseases: chlorosis, hiccough, gout, pertussis, gastritis, endocarditis. 3. How would you manage a case of infantile convulsions? How would you manage a case of angina pectoris? 4. Name four diseased conditions in which counter-irritation might do good? What would you use for the same? 5. Give your treatment for the following: cholera infantum, tuberculous meningitis, neuralgia, edema of glottis.

MATERIA MEDICA.

1. What is antipyrin? Discuss the physiologic action and the adult and child dose of same. 2. Name four preparations of the following drugs and give their dose: aloes, arsenic, aconite, lodin, phenol, phosphorus, rhubarb, lead, opium. 3. Discuss the action of tuberculin. 4. Name the active principles of the following drugs and give their dose: veratrum viride, hydrastis, digitalis. 5. What are the alteratives? Name four and give dose of same.

LEGAL MEDICINE.

1. What is meant by cadaveric rigidity and cadaveric lividity? 2. On what grounds would you form your opinion that a child was legitimate or illegitimate? 3. What bearing has medicine on life insurance? 4. Give examples of medicolegal cases. 5. What facts would you note in being called to a case of gunshot wound?

PRACTICE.

1. Discuss the use of the Brand bath in typhoid fever. 2. Give (a) the etiology of malaria fever, (b) of yellow fever. 3. Give the symptomatology of variola. 4. Give prognosis and treatment for a child congenitally syphilitic. 5. Differentiate between septic intoxication and septic infection. 6. Discuss the possibility of involvement of organs remote from the urethra in gonorrhea in the male. 7. Give the differences, as revealed by microscopic blood examination, between anemia and chlorosis. 8. Write a short article on tachycardia. 9. What are the symptoms and prognosis in Bell's palsy? 10. What differences would you expect to find between urine from a patient with chronic parenchymatous nephritis and urine from one with chronic interstitial nephritis?

SURGERY.

1. What is leukocytosis? What is its value in surgery? 2. Differentiate between an abscess and a tumor over an artery. 3. Make a diagnosis of hip-joint disease. 4. Describe the changes that take place during inflammation. 5. Give the etiology, pathology, symptoms and treatment of erysipelas. 6. How would you reduce a dislocation of the hip? 7. Give the etiology, pathology, symptoms and treatment of synovitis. 8. What are the dangers liable to follow gonorrhea? 9. Give the symptoms of fracture and name varieties. 10. Describe in detail the operative treatment in a case of empyema.

Society Proceedings

COMING MEETINGS.

Colorado State Medical Society, Glenwood Springs, Sept. 17-19.
Amer. Assn. of Obstetricians and Gynecologists, Detroit, Sept. 17-19.
American Electro-Therapeutic Assn., Boston, Sept. 17-19.
Medical Society of the State of Pennsylvania, Reading, Sept. 23-26.
Southern Medical Association, Birmingham, Ala., Sept. 24-26.
Amer. Acad. of Ophthal. and Oto-Laryng., Louisville, Sept. 26-28.
American Public Health Assn., Atlantic City, Sept. 30-Oct. 4.
Medical Assn. of District of Columbia, Washington, Oct. 1.
American Roentgen Ray Society, Cincinnati, Oct. 2-4.
Idaho State Medical Society, Boise, Oct. 3-4.
Delaware State Medical Society, Wilmington, Oct. 8.
Nevada State Medical Society, Reno, Oct. 8-9.
Mississippi Valley Medical Association, Columbus, O., Oct. 8-10.
Vermont State Medical Society, St. Johnsbury, Oct. 10-11.
Kentucky State Medical Association, Louisville, Oct. 15-17.
Assn. of Military Surgeons of the U. S., Norfolk, Va., Oct. 15-18.
American Association of Railway Surgeons, Chicago, Oct. 16-18.

OHIO STATE MEDICAL ASSOCIATION.

Annual Meeting, held in Cedar Point, Aug. 28-30, 1907.

PROCEEDINGS OF THE HOUSE OF DELEGATES.

The House of Delegates met first on Wednesday morning, August 28, with the president, Dr. B. R. McClellan, Xenia, in the chair. In the absence of Dr. Winders, Dr. J. H. J. Upham, Columbus, was made temporary secretary.

The report of the treasurer showed the membership in detail in each county society for the last fifteen years. In 1893 the membership for the entire state was 707. In 1902, the year before reorganization in Ohio, it had fallen to 656. The following year it had risen to 2,259, a gain of nearly 300 per cent., while the present membership is 3,453. The total receipts of the secretary's office for the year were $5,429.93, disbursements $4,487.61, balance on hand $942.32. Hereafter, the fiscal year will run from January 1 to December 31.

To Cooperate with A. M. A. Council on Medical Education.

DR. GRUBE reported on the meeting of the Council on Medical Education held in Chicago and reviewed the work of the council for the past year, presenting the following resolution, which was adopted:

Resolved, That the Ohio State Medical Association commends the efforts of the national Council on Medical Education to raise the standard of medical education in this country and pledges its hearty cooperation to bring about these reforms. In the furtherance of this resolution, we recommend the creation of a standing committee of three to cooperate with the Council on Medical Education in the medical educational affairs within our state.

Seek to Improve Milk.

DR. SHERMAN of Cleveland offered a resolution declaring it to be an important and imperative public duty to safeguard the source of the milk supply of the cities of Ohio and authorizing the appointment of a committee to consider the advisability of legislation providing for the inspection of milch cows, dairy farms and diseased cattle; compensation to owners of condemned cattle and protection of the cattle of the state against the importation of disease. These resolutions were referred to the legislative committee.

The report of the Publication Committee was read and adopted.

Good Reports from Councilors.

DR. BROOKS F. BEEBE, Cincinnati, reported every county in his district as organized and working. A most excellent district meeting was held during the past year. Dr. Beebe, as chairman of the council, emphasized the importance of postgraduate work in county societies and of popular lectures held under the auspices of county societies. He also emphasized the relative importance which ethical questions are coming to have in society discussions. During the last year over 200 papers were read in the various county societies on ethical and medicolegal subjects.

DR. HORACE BONNER, councilor for the second district, reported increased membership, better attendance and more in-

terest and enthusiasm in the county societies in his district this year than ever before.

DR. J. H. JACOBSON, Toledo, councilor for the fourth district, reported all counties but one organized. He emphasized the importance of systematic postgraduate work and of care in the selection of officers for county societies. In some of the counties in his district the plan has been adopted, in making up the program, of appointing an "understudy" for the essayist so that, in case the principal is absent, there will be some one to take his part in the program. One county in his district has adopted a rule whereby officers absent from three consecutive meetings forfeit their office without any action on the part of the society. This permits the election of new and active officers.

DRS. T. CLARKE MILLER, Massillon, CHARLES S. MCDOUGALL, Athens, JOHN E. SYLVESTER, Wellston, and T. W. RANKIN, Columbus, councilors for the sixth, eighth, ninth and tenth districts, respectively, reported that most of the county societies in their districts are organized and at work.

An amendment to the constitution, changing the term of office of councilors from five to two years, failed of adoption. An amendment establishing a "Central Secretaries Committee," to devise ways and means of assisting and simulating the work of the county secretaries, was adopted.

To Promote Graduate Work.

DR. BEEBE, chairman of the council, introduced a resolution which was adopted, approving the efforts of the council to institute a general graduate course in every county society in Ohio, and to advance the education of the laity by popular lectures on medical subjects.

Election of Officers.

The officers elected were given in THE JOURNAL last week, page 859. The Committee on Public Policy and Legislation now consists of Drs. J. W. Clemmer, Columbus, George H. Matson, Columbus, and W. H. Snyder, Toledo; the Committee on Publication of Drs. C. F. Clark, Columbus; Charles S. Hamilton, Columbus, and the secretary, *ex officio*.

DR. FRANK WINDERS, for several years secretary of the association, declined re-election on account of ill health. Dr. Winders expects to be abroad for some time.

Columbus was selected as the next place of meeting.

Approve Public Health Defense League.

DR. SILVER announced that the Hon. Champe Andrews, New York City, would deliver an address regarding the organization and work of the Public Health Defense League and that, at the same time, a report from the Ohio State League for the Suppression of Fraudulent Advertisements would be presented. He therefore introduced the following resolution, which was adopted:

WHEREAS, To protect the public health, and to educate the public in public health matters, it is generally recognized that the physician and the layman must organize and work together, and

WHEREAS, The Public Health Defense League is a national society, providing an efficient organization in which layman and physician are working together effectively for the laudable ends desired, therefore, be it

Resolved, That the Ohio State Medical Association heartily desires the progress of the Public Health Defense League, especially in the state of Ohio, and, to that end, offers the use of its journal for the purpose of spreading the propaganda of the league and urges all the members of the profession throughout the state to become members of this society.

Active Campaign for Legislation Committee.

Resolutions were offered from the Reference Committee on Public Policy and Legislation, recommending the employment of an attorney whose duty it shall be to advise in legislative and other matters concerning the profession, and that the House of Delegates appropriate $1,000 for this purpose. The resolutions were adopted.

DR. CLYDE FORD, Cleveland, presented an amendment to the by-laws providing for an annual meeting of the Committee on Public Policy and Legislation, and authorizing it to report to the state association in matters of public policy and legislation. This amendment was adopted.

DR. BROWN, Toledo, introduced a resolution, requesting each county society to make a special contribution of not less than 50 cents per capita for a fund for the Committee on Public Health and Legislation. This was adopted.

Records of Congressmen on National Legislation.

DR. CHARLES A. L. REED, Cincinnati, read the report from the Committee on Medical Legislation and offered the following resolutions, which were unanimously adopted:

Resolved, That the attitude of Senator Foraker, Senator Dick, and Mr. Southard, of the Ohio delegation to Congress, with reference to the pure food and drugs bill, as shown by the *Congressional Record*, merits and hereby receives the emphatic disapproval of the Ohio State Medical Association, and should receive the similar disapproval not only of every physician, but of every citizen of the state of Ohio.

Resolved, That the attitude of Messrs. Goebel, Campbell, Keifer, Bannon, Taylor, Mouser, Webber, Dawes, Weems, Smyser, Kennedy, Thomas, Beidler and Burton in supporting and voting for the pure food and drug bill merits and hereby receives the cordial approval of the Ohio State Medical Association, and should receive the similar approval not only of every physician but of every citizen of the state of Ohio.

Resolved, That Senator Dick merits and is hereby tendered the thanks of the Ohio State Medical Association for his activity and interest in behalf of the bill for the relief of Dr. James Carroll.

Scientific Work Divided into Sections.

DR. FORD offered an amendment to the by-laws, providing for scientific meetings of the association under the following sections: 1, General Medicine; 2, General Surgery and Gynecology; 3, Obstetrics and Pediatrics; 4, Dermatology and Genitourinary Diseases; 5, Eye, Ear, Nose and Throat; and also providing for registration of members and for the election of the officers of these sections. This amendment was adopted.

(*To be continued.*)

Medicolegal

Essentials of Privileged Communications—Communications to Physicians of Railway Company—Waiver.

The United States Circuit Court of Appeals, Eighth Circuit, says, on the appeal of Union Pacific Railroad Company vs. Thomas, a personal injury case brought by the latter party, that the plaintiff was injured in a collision on the railroad, and was taken to the surgeon's room in the Union station at Omaha, where two of the physicians of the company attended her. There was evidence that the physicians went to the station on behalf of the company to render professional services to any who had been injured by this collision who were in need of such services, that the questions which they asked, the examinations which they made, and the information which the plaintiff gave to them were proper and necessary to enable them to treat her as physicians in a skilful way, and that they were made and given for this purpose; but that the plaintiff refused to permit any extended examination of her person in the station, and when one of the physicians gave her a sedative she refused to take it, and demanded that she be removed to her home. The Circuit Court refused, on her objection, to permit the medical men to testify to the examinations of her which they made, to their conversations with her, and to the treatment which they gave her at the station, on the ground that these were confidential communications under Section 5907 of the Compiled Statutes of Nebraska of 1901, which provides that no physician, surgeon, etc., shall be allowed, in giving testimony, to disclose any confidential communication, properly intrusted to him in his professional capacity, and necessary and proper to enable him to discharge the functions of his office according to the usual course of practice.

The Circuit Court of Appeals does not think that there was any error in the ruling stated. It says that the essential elements of a privileged or a confidential communication to a physician under the Nebraska statue are: 1, The relation of physician and patient; 2, information acquired during this relation; and 3, the necessity and propriety of the information to enable the physician to treat the patient skilfully in his professional capacity. These attributes characterized the communications which the defendant sought to prove by the physicians, and they were not deprived of their privileged character by the fact that the relation of physician and patient

was established at the request of the defendant and against the protest of the plaintiff. Confidential communications by a patient to a physician are not less privileged because the relation is established at the request of a third person. The physicians who testified in this case attended the plaintiff for the purpose of treating her in their professional capacity, in the discharge of their duty to the company which employed them. All the information which they acquired from her was necessary or proper to enable them to do so. This information was obtained during the existence of the relation of physician and patient, which they themselves established and by virtue of that relation alone, and it was rightfully excluded under the statute of Nebraska.

In other words, the court holds that information which is proper and necessary to enable the physicians of a railroad company to treat an injured person, which is acquired by them from such person for that purpose while they are endeavoring to treat her professionally, although against her protest, is a privileged communication, under such a statute.

One of the questions and one of the answers excluded read in this way: "Q. You may state what Mrs. Thomas said to you. A. She said she had been injured in the wreck by being struck on the back of the neck." In view of the probability that it was necessary and proper for the physician to learn in what part of her person the plaintiff had been injured in order to properly treat her the court sees no sound reason why the information which this answer conveyed was not privileged. It says that it may be unnecessary for a physician to learn by what force an injury was inflicted on the patient, while it may be indispensable for him to know on what portion of his person this force was imposed in order to treat him skilfully. The question and answer were a part of a communication between the physician and his patient which consisted of the statement in the answer, of other conversation and of a limited examination. They were all of a privileged character and properly excluded.

The court further says that testimony voluntarily produced on behalf of a patient of communications between him and his physician undoubtedly waives his privilege and exempts the evidence of the physician relative to the communication from all objections on the ground that it is confidential or privileged, because the patient has thereby made it public. But the reason for this rule is that the patient has deprived the communication of its confidential character by voluntarily causing it to be recited in public. But testimony that is not voluntarily given and evidence that does not recite the communication works no waiver, because the reason for the rule there ceases, and the rule becomes inapplicable. On her direct examination the plaintiff testified that some one whom she did not know came into the station, wanted to examine her, took hold of her feet and felt them, and put his hand under the back of her neck, and she told him she did not want him to touch her, but gave no evidence that this person was a physician, or that there was any farther communication between them. There was no other evidence on this subject in her direct examination, and this constituted no waiver of the privilege, because it did not recite or set forth any of the conversation with her or any of the information relative to her condition or her injury, which the physicians secured by virtue of their professional relation and the defendant sought to introduce by means of them.

Rights of Purchaser of Office and Good Will.

The Supreme Judicial Court of Massachusetts has, in Foss and another vs. Roby, rendered a decision which it would seem should apply in principle as much between physicians as between dentists, although this case was one between dentists. It says that it appeared that one of the plaintiffs and the defendant had been partners engaged in the practice of dentistry, at 132 Court Street, in the city of Boston, and on a dissolution of the firm the defendant sold to him his interest in the office furniture and dental equipment with the good will of the business; that such plaintiff had subsequently formed a partnership with the other plaintiff, to whom he conveyed a half interest in the personal property, including the good will, and that they had continued business at 101 Tremont Street. After a lapse of about three years the defendant opened an office at 88 Boylston Street, where he carried on the practice of his profession. By solicitation he obtained many of the patients of the old firm, and his business substantially consisted of this patronage. The important questions for decision were, whether the defendant was precluded by his agreement from setting up a competing business, and the measure of relief to which the plaintiffs were entitled.

By the contract of sale, while the defendant explicitly conveyed his interest in the good will, he did not expressly covenant to refrain from competition, either as to time or territory. But the sale being of an established practice, described in the instrument as "the dental business" then carried on at "Court Street in said Boston," it was implied, even if not expressed, that thereafter the defendant would so practice his profession as not to injure and perhaps destroy the business he had sold.

In a mercantile partnership the sale of the good will conveys an interest in a commercial business, the trade of which may be largely, if not wholly, dependent on locality, and the right which the buyer acquires under such a purchase, is the chance of being able to retain the trade, connected with the business where it has been conducted. But in a partnership for the practice of dentistry, the personal qualities of integrity, professional skill, and ability attach to, and follow the person, not the place.

The object to be obtained was the protection of the purchaser, and the agreement was to be construed as if the defendant had expressly convenanted to render the old practice secure, not by competing himself, under conditions by which it might either be impaired or destroyed. If this were permitted, then while retaining the consideration, the defendant might also deprive the plaintiffs of the benefit of their purchase by regaining the customers.

Neither was the agreement, under this construction, invalid because unlimited in time, for the consideration paid must be treated as having been accepted by the defendant as a full equivalent for a release of his right to compete within a restricted area, if by such competition the good will sold was, or might be rendered insecure. Nor was any principle of public policy violated, by unduly restricting lawful competition.

On resuming practice the defendant sent out printed circulars to former patients, giving the name of the old firm, with the street and number, and announced, that having opened an office in the city, he solicited their custom. By this scheme of advertising he sought to regain the good will with which he had parted, and his efforts having been successful, the defendant had deliberately broken his implied covenant, by setting up a rival business, and while the plaintiffs should be granted adequate relief for this breach of his contract, the remedy, on the facts found, should not be broader than was reasonably necessary for their protection.

The business of the old firm was conducted in Boston, which was the only locality referred to in the agreement, although the practice was not wholly derived from the place where patients were treated, but had been acquired from other cities and towns throughout the eastern and interior sections of the state. But until it became affirmatively manifest that the plaintiffs were likely to derive some substantial advantage, or protection, the place ought not to be extended by implication to include the entire area within which former patients resided. The preservation of this territorially diversified patronage in the form in which it had been established was the object contemplated by the parties, and with which the defendant agreed not to interfere. By practicing dentistry at his present location in the manner described, he competed with the plaintiffs by obtaining former resident patrons and also those who, when coming to the city for dental treatment, resorted to him, when otherwise they might have employed them. They were, therefore, amply protected by an injunction enjoining the defendant from practicing his profession within the limits of the city.

The decree of the Superior Court in favor of the defendant must be reversed, and a decree awarding an injunction, with costs, should be entered. And it being further shown that the larger part of the defendant's present practice had been derived from these patients, if the plaintiffs requested, such money damages as they had sustained from this breach of the contract, also might be assessed.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York.

August 31.

1 *Causes and Characteristics of Weak Foot. R. Whitman, New York.
2 *Report of Research Work on the Effects of Tropical Climate on the White Race. E. P. Wolfe, U. S. Army.
3 *Longevity of Idiots. L. P. Clark and C. E. Atwood, New York.
4 Fecal Toxemia. W. F. Waugh, Chicago.
5 Early Recognition of Tabes Dorsalis. C. Rosenheck, New York.

1. **Weak Foot.**—Whitman thinks that notwithstanding the deformity of flatfoot has been analyzed and described by several anatomists, the importance of weak foot, the most common and the most disabling of all the postural deformities, has been unsuspected in the absence of pain. Whitman describes two postures of the foot: that of activity and that of inactivity. In activity the foot is incurved at its inner border and the arch is accentuated, while in inactivity the foot is everted and the body weight is directed toward the inner side of the sole. The deformity of the weak foot is an abnormal persistence or exaggeration of the attitude of abduction or rest. The abduction is primary; the lowering of the arch is a secondary element. The symptoms are not due to the deformity as such and have no proportionate relation to its degree; they are the result of the overstrain and injury to which disordered function has exposed the foot. Predisposing causes are deficient support due to congenital or acquired abnormality, deficient power due to weakness of muscles, overweight or overstrain, and improper attitudes, the most important of which is toeing outward. The wearing of improper shoes is a factor. The symptoms are faulty attitude, impaired function, sensation of weakness, of tire and strain along inner border of foot and beneath the arch; pain in the heels is often prominent; the discomfort may extend to the calves, knees, and, especially in women, to the back. Drooping of the spine may result. Proper shoes and training into proper attitude in the case of children are preventives. The author has invented a brace, molded on an accurate plaster model. Actual deformity may need correction.

2. **Tropical Climate and the White Race.**—Wolfe makes a preliminary report of observations conducted on fresh troops to the extent of 214 examinations. He finds that after arrival in the tropics a state of increased activity of all the bodily functions and a sense of well-being occurs, which lasts from perhaps three to twelve months. This is followed by a state of quiescence or indifference, which gives place insensibly to a state of lassitude, nervous irritability, weakness and neurasthenia. The skin loses its soft ruddy hue and acquires an anemic, muddy, yellowish bronzed appearance, the eyes lose their brightness, the face its animation. Conjunctiva and sclera become muddy yellow, elasticity and uprightness disappear; the shoulders droop, mental activity becomes an effort, then follows mental and physical stagnation and retrogression. The individual's life has much to do with the change; all contrary theories notwithstanding, an active life is as necessary in the tropics as in the temperate climes. The author's attention was called to this in Cuba in 1899, where teamsters and packers, who drank any and all kinds of water, and alcoholic liquors too, were out in the sun nearly all day, and kept all kinds of hours at night, had a very much lower sick rate than the enlisted men, who did nothing outside their guard duty but lie around their tents, and for whom all available precautions were taken. In those accustomed to a cold climate bodily heat production is in excess, to balance radiation and maintain a normal standard. On sudden transportation to a tropical climate the blood is driven to the periphery for the elimination of heat. The chronic peripheral engorgement results in permanent capillary dilatation, with more or less blood stasis, and, as a consequence, the cerebral circulation is diminished and the nourishment of the brain lessened, as was shown by Schüler (*Deutsch. Arch. f. klin. Med.* XIV). Bad functioning of the organs results and a vicious circle is thus established.

3. **Longevity of Idiots.**—Clark and Atwood controvert the common belief that idiotic children rarely grow to adult life, and as a result of the investigation of 785 cases they conclude that idiocy under good care does not seriously curtail life.

Boston Medical and Surgical Journal.

August 29.

6 *The Dignity of Medicine. I. J. Prouty, Keene, N. H.
7 *The Three Long Continued Fevers of New England. R. C. Cabot, Boston.
8 *Organization of Tuberculosis Classes. J. H. Pratt, Boston.
9 *Function of Medical Inspectors. C. Harrington, Boston.
10 Factory Inspection. F. G. Wheatley, North Abington, Mass.

6. **Dignity of Medicine.**—Prouty, in his address to the New Hampshire Medical Society, calls attention to the loss of dignity sustained by the medical profession in recent years, but points out that both the church and the law are suffering to some extent in like manner. This fact suggests a common cause for the decline in the public estimation of all these professions. In his individual capacity the doctor has not been found wanting; it is in the lack of collective force that the explanation is to be found. The tendency of the age is toward collectivism, as is evidenced by commercial bodies. It is medical organization, working, however, along lines that studiously avoid, even in appearance, everything that might savor to the non-professional mind of professional advantage, and judiciously used in establishing and maintaining relations of confidence between the public and the profession, that must be looked to to restore the medical profession to its position of old-time dignity in the public eye. One point especially the author emphasizes: "The dignity of our profession is lowered when a physician's services can be bought at wholesale and peddled out at retail to further commercial ends."

7. **Long-Continued Fevers.**—Cabot, as the result of painstaking analysis of the figures of the Massachusetts General Hospital, arrives at the conclusion that in New England there are but three long, common, continued fevers, and by this term he refers to a fever which lasts two weeks or more, in which the temperature is continuously above 99. These fevers are typhoid, tuberculosis, sepsis. An examination of a much larger number of cases from private practice and from the records of the hospital confirm the impressions made by the earlier set of statistics. Under sepsis, he includes all diseases due to the pus-forming bacteria, which are prone to exert their influence in any part of the body—abscesses, wounds, puerperal fevers, appendicitis, fevers originating in the gall bladder and pelvis, and dubious fevers associated with cardiac valvular vegetations. These, with tuberculosis and typhoid, make up 90 per cent. of all cases. Meningitis, influenza, acute articular rheumatism, leukemia, cirrhosis and gonorrhea represent the remaining 10 per cent. There is no such thing as "simple, continued" fever, "slow fever," or "low fever," "bilious fever," or "gastric fever," neither are there any long-continued fevers due to hysteria, neurasthenia, mental affections, constipation, etc. He refers to the frequency with which tuberculosis of the lungs is mis-diagnosticated. Typhoid fever, gastric fever and malaria are the common errors. It should be recognized that not only may there be chills in tuberculosis of the lung, without cough, but there may be a chill every day at the same hour. No one can have malaria and repeated chills without showing parasites in the peripheral blood. As to typhoid, Cabot insists that typhoid in the majority of cases presents the picture of a patient who has fever and nothing local to show for it. He thinks that people may have typhoid and no symptoms whatsoever. They may carry around bacilli in their gall bladders and shed them through the intestines as a constant menace to the community. As to sepsis, abscess of the liver often gives rise to no local symptoms whatsoever. Some forms of appendicitis, affections of the gall bladder, subphrenic abscess and empyema following pneumonia form foci of sepsis, which may result in fever.

8.—A similar article by Pratt appeared in THE JOURNAL, Aug. 31, 1907, page 755.

9. **Medical Inspectors.**—Harrington considers the new "Act to Provide for the Establishment of Health Districts and the Appointment of Inspectors of Health," of Massachusetts, which became a law June 19, and details the duties of a medical inspector under this act. In brief these are: To inform him-

self respecting the sanitary conditions of his district and concerning all influences dangerous to the public health or threatening to affect the same; to extend the same protection to minors employed in factories as has been already provided for school children, and to enforce under the direction of the State Board of Health, and in place of the inspection department of the district police, all the various laws in reference to sanitary matters, such as regulation, etc.

New York Medical Journal.

August 31.

11 *Villous Papillomata of the Rectum. B. M. Ricketts, Cincinnati.
12 Glaucoma. M. Buchanan, Philadelphia.
13 *Bacteriologic Examination of Feces for Early Diagnosis in Tuberculosis. M. Solis Cohen, Philadelphia.
14 *Treatment of Chronic Indigestion. H. Weinstein, New York.
15 Local Inflammation and Its Treatment. H. J. M. A. von Tiling, Poughkeepsie, N. Y.
16 *Children's Calculations. E. L. G. Brown, New York.
17 Police Methods for Sanitary Control of Prostitution. F. Bierhoff, New York.

11. **Villous Papillomata of Rectum.**—Ricketts notes the rarity and the disposition of these neoplasms to undergo epitheliomatous degeneration. Their cause is unknown; they may be single, sessile or pedunculated; they occur more frequently between 35 and 60 years of age; the sex incidence is equal. Recurrence usually indicates malignancy; the pedicle when present is usually of mucous membrane, and from one to three inches in length. The size varies from that of a millet seed to more than five inches in diameter. Symptoms: Profuse and frequent discharge of a yellow, turbid, albuminous secretion, constipation, tenesmus and emaciation. These symptoms are almost constant. Hemorrhage is not an early associated symptom; cachexia appears in the later stages; febrile disturbances vary in degree; prolapse and frequent urination are common. The author considers the method of operation and describes thirteen cases, the last of which, in addition to conclusions peculiar to itself, leads Ricketts to the generalization that the relationship of villous papilloma and adenoma of the rectum being so intimate and difficult to determine, is greatly in favor of the two existing at the same time in a given case.

13. **Bacteriologic Examination of Feces in Tuberculosis.**—Solis-Cohen recommends routine examination of feces in pulmonary or general tuberculosis. He reports a series of six cases which led him to the conclusion that an early diagnosis of tuberculosis can often be made by bacteriologic examination of the feces, in the absence of clinical symptoms, and even of physical signs. The feces of tuberculous patients must be regarded as a source of contagion and thoroughly disinfected; and the same precautions that are taken in typhoid fever, with regard to hands, clothing, etc., should be taken in tuberculosis; "closed" tuberculosis may not be really closed, for the tubercle bacilli may escape in the feces. This may be the case also in latent tuberculosis. He further says: "Can tubercle bacilli be eliminated by the bowel without the latter being involved, just as they are believed to be excreted by the kidneys in the absence of tuberculous lesions in the genitourinary tract? Does the presence of tubercle bacilli in the feces indicate the existence of a tuberculous infection in the absence of symptoms or of demonstrable lesion? Some believe that in cases of pulmonary tuberculosis in which the intestines are not involved tubercle bacilli gain access to the bowel by means of swallowed sputum. Interesting in this connection is the absence of expectoration in several of my patients. It is possible that in some cases tubercle bacilli in the feces may point to the bowel as being the portal of entrance rather than of exit. Their presence may have some bearing on the theory as to the intestines being the portal of entry in the majority of tuberculous infections. Normal persons in whose feces tubercle bacilli are found might, therefore, represent individuals who are just being attacked or who are resisting the efforts of the bacteria to gain a foothold. Between these and well-marked cases of tuberculosis all gradations may exist. The frequent occurrence if ischiorectal abscess and fistula in ano in patients suffering from pulmonary tuberculosis may possibly be explained by the presence of tubercle bacilli in the bowel of all such cases. May there not be carrier cases of tuberculosis; persons who harbor tubercle bacilli, without becoming themselves infected thereby, but who nevertheless may infect others with tuberculosis?"

14. **Treatment of Chronic Indigestion.**—Weinstein considers the surgical advice, to resort to operative procedures in all cases that do not show improvement after a few weeks of internal medication, as not only unwarranted but directly dangerous. Absence of a clear diagnosis with consequent improper treatment is at fault in many cases of poor results. He does not dispute the legitimate field of surgery in gastric diseases, but considers it necessarily limited to those cases in which there is mechanical obstruction interfering with the proper evacuation of the stomach contents.

16. **Children's Calculations.**—Now that sanitary requirements have replaced the figured patterns and gay pictures of the wall papers, Brown pleads for decoration of the tiles used in the walls of children's hospitals and wards. He points out the great value mentally to children, especially to sick children, of giving them an opportunity for their childish calculations and a form of diversion such as would be afforded by the decoration of the white tiles used in the walls.

Lancet-Clinic, Cincinnati.

August 31.

18 *Pruritus Ani. L. J. Krouse, Cincinnati.
19 Carbolic Acid and Iodin. W. E. Savage, Cincinnati.

18. **Pruritus Ani.**—Krouse considers in detail the pronouncements of leading proctologists and surgeons as to the pathology of pruritus ani, and concludes that the condition has no recognized pathology definitely established. In his opinion there is a pruritus ani essentialis, due not to a local, but to a constitutional fault, a primary affection, the result of trophic changes in the nerve parts. The condition found on the examination of a long-standing case of this kind is that the skin of the anus, as well as that of the immediate vicinity, is thickened, drier, deficient in pliability and radiates in folds from which the normal coloring matter is absent, so that it presents a grayish parchment-like appearance. The author points out that a similar process of absorption of pigment takes place in leucoderma, a disease generally admitted to have its source in the nervous system. From this he concludes that a similar condition in the anal region should be attributed to a similar cause, and that in such cases as these pruritus ani is not a symptom, but an actual disease.

The Medical Fortnightly, St. Louis.

July 25.

20 Evolution of Infections. A. L. Benedict, Buffalo, N. Y.
21 Physical Stigmata of Degeneration. A. MacDonald, Washington, D. C.
22 *Surgical Reduction of the Excessively Large Ear. C. C. Miller, Chicago.

August 10.

23 Things Medical in Turkey. R. C. Eccles, Brooklyn, N. Y.
24 Evolution of Infections. A. L. Benedict, Buffalo, N. Y.

22. **Reduction of Large Ears.**—Miller points out a field of specialism that is not overcrowded, in the performance of operations to improve the appearance. In regard to operation for large ears, he notices the triangular method and the crescent method, which consist in removing a triangular segment or a crescent, from the ear and suturing. He then describes his own sickle method. The operation is performed under a weak cocain infiltration. The ear is turned forward and the tissue destined to excision marked out with a sharp scalpel. The skin on the posterior surface of the ear is cut down through to the cartilage, and the cartilage cut through with care, so that the anterior skin is not punctured. A sickle-shaped piece of cartilage, the handle pointing to the junction of the helix with the scalp, and the curve following that of the helix is removed. Bleeding should be controlled before the parts are sutured. The ear swells and tingles and burns as though frost-bitten, but these symptoms subside after a few days and need cause no fear.

Detroit Medical Journal.

August.

25 *Mind Cure; Its Service to the Community. R. C. Cabot, Boston.
26 Physical and Mental Effects of Gynecologic Operations. W. P. Manton, Detroit.
27 Appendicostomy—Its Indications. S. Stevens, Kalamazoo, Mich.
28 A Surgeon's Outing. H. C. Wyman, Detroit.
29 Study of the Infant's Stool. (Continued.) P. Selter, Solingen, Germany.

25. **Mind Cure.**—Cabot analyzes, with remarkable clarity, the real in all mind cure systems and draws valuable deductions therefrom. While the limitations of psychic treatment in well-established disease are very great, its preventive power may also well be supposed to be great, for it gets a grip rarely attained by physicians on the actions of the not-yet-ill. "There is no question but that the fear of disease can lead through loss of appetite and sleep to serious disturbance of nutrition, which in turn predisposes to infection." Laying aside all accretions, mind cure doctrine contains three main articles of belief. 1. People are sick because they think so. 2. People are sick because they don't behave themselves properly. 3. The thought of sickness in itself is a pernicious one and should be banished so far as possible from consciousness. With regard to the first point Cabot says that there is no question that the fear of disease can lead, through loss of appetite and sleep, to serious disturbance of nutrition, which, in turn, predisposes to infection. [On the other hand, healthy mental influences can in all probability stimulate protoplasmic activity in the phagocytes.—ED.] In regard to the second point, apart from ordinary breaches of hygiene, and the harm done by alcohol, venereal disease and reckless living, there are a number of women, who by the inertia of rest are thoughtlessly drifting anywhere, and a number of men, who by the inertia of motion are recklessly driven nowhere. As to the third point, the author strongly endorses the perniciousness to the patient of the idea and atmosphere of disease. It is good for a physician to throw himself into the study of disease, because it makes him forget himself, but we may fail to realize how bad this same consideration of disease is for the patient, because it makes him think of himself. Cabot cites the case of Mrs. Browning, and the cure effected when Browning rescued her from her atmosphere of invalidism and carried her off to Italy. As a causative factor in disease he compares internal concealed sorrow to internal concealed hemorrhage. "Some gnawing jealousy, half concealed for years from the patient herself, some supposed slight, brooded over secretly and poisoning happiness, some half-acknowledged shame for physical defect, or for a supposedly unpardonable error, long before forgiven and forgotten perhaps by every one, but the sufferer herself—some such foreign body in mental life, my friend the mind curist believed might be the source of unhappiness and ill health for many years." It is idle to recommend people to "stop thinking" or "stop worrying." The only way to oust one set of thoughts is to instil another in its place. The author summarizes his article practically as follows: 1. The mind cure movement has rendered notable public service because its main ideas are important and, in spirit if not in their letter, true. 2. The mind cure movement exerts a force of healthy criticism on the physician's tendency (a) to ignore the possible aggravation of disease by the mental effects of the methods of diagnosis and treatment which he uses; (b) to encourage the doctor habit, and (c) to treat neurotic cases either by an attempted and diluted mental régime or by "sitting on the safety valve."

Northwestern Lancet, Minneapolis.

August 15.

30 Importance of Early Recognition and Treatment of Convergent Strabismus in Young Children. W. R. Murray, Minneapolis.
31 *New Theory of Causation of Eclampsia. W. Reid, Deer Wood, Minn.
32 Metastatic Abscess of Liver. W. T. Adams, Elgin, Minn.
33 Lichen Ruber. E. Klaveness, Sioux Falls, S. D.
34 The Doctor's Automobile. A. D. Hard, Marshall, Minn.
35 Sebaceous Cysts of Nose. C. D. Harrington, Minneapolis.

31. **Eclampsia.**—Reid summarizes his conclusions as follows: 1. The immediate cause of eclampsia is high tension in the vessels. 2. The cause of high tension is coagula in the blood. 3. The remote cause is retardation or stagnation of blood in the uterine and the neighboring veins by the predisposition of the anatomy, such as large sinuses and irregular adjustment between maternal and placental circulation. 4. There exists a special ferment or toxin, which, with the preceding causes, determines the coagulability of the blood. This toxin has not been traced to its origin, but is shown to exist in the placenta.

Philippine Journal of Science, Manila.

June.

36 *Studies in Plague Immunity. R. P. Strong, Manila.

36. **Studies in Plague Immunity.**—Strong summarizes in his introduction to this issue the generalization made by him in the statement that it is "demonstrated that a satisfactory immunity can be obtained in the guinea-pig, an animal even more susceptible to plague infection than is man, by the inoculation of living cultures of plague bacilli of such attenuation that they are no longer dangerous when injected into human beings. Therefore, this laboratory believes that by the method of vaccination against plague, with suitable cultures, we have probably an efficient measure for the efficient control of this infectious disease, and we recommend its adoption for this purpose." The term vaccination is used in the sense of Jenner and Pasteur, to signify immunization with the living attenuated organism, not protective inoculation by means of killed organisms or their extracts.

University of Pennsylvania Medical Bulletin, Philadelphia.

July-August.

37 *Value of Chemical and Biologic Methods in Medical Diagnosis. A. Stengel, Philadelphia.
38 *Abdominal Complications and Sequelæ of Typhoid. C. H. Frazier and R. A. Thomas, Philadelphia.
39 Existence of Anti-enzyme in Tapeworm. D. W. Fetterolf, Philadelphia.
40 *Imperforation of Rectum and Anus. A. P. C. Ashhurst, Philadelphia.

37. **Chemical and Biologic Methods in Diagnosis.**—Stengel points out that from time to time iconoclasts appear, who decry either the clinical or the laboratory method of diagnosis. "Knowledge and experience," he says, "with the laboratory methods alone are quite compatible with brilliancy, but not with breadth of view, and familiarity with the clinical methods only does not constitute the equipment of a modern diagnostician." The successive steps in the knowledge of a certain disease have often been made possible largely or wholly by the help furnished in the laboratory, and though the chemical or biologic methods may afterward be unessential in the study of the case, the proper understanding is none the less dependent on the data available through such methods. He considers the contribution of chemistry to diagnosis in regard to disorders of metabolism the chemical diagnosis of kidney disease and hepatic disease, the detoxicating function of the liver, the chemical determination of pancreatic disease, and chemical methods in gastric diagnosis and occult blood; in support of the value of chemical methods; while the value of biologic methods is evidenced in the use in diagnosis of the morphologic characters, the isolation of specific organisms in pure culture and in animal inoculation, as well as inoculation with the products of disease and the serum reactions—agglutination, precipitins, opsonins, bacteriolysis, deviation of the complement, etc., the injection of bacterial products, blood cultures, the examination of serous exudates and cerebrospinal fluids, and the services rendered in particular diseases, typhoid, tuberculosis, rabies.

38. **Abdominal Complications and Sequelæ of Typhoid.**—Frazier and Thomas point out that the term "abdominal complications," as applied to typhoid, at once suggests to the surgical mind intestinal perforation; but other abdominal crises and complications, perhaps less common but equally serious, occur. Among these they consider acute intussusception, of which eight cases are recorded; volvulus, four cases; rupture of inflamed mesenteric glands, two cases; strangulated Meckel's diverticulum; typhoid pancreatitis; fecal impaction, and peritonitis without perforation; appendicitis as a forerunner of typhoid, and also appendicitis in typhoid, which authors divide into the following groups: 1. A group in which, at the onset of the fever, the cases are erroneously regarded as appendicitis. 2. A group in which an undoubted case of appendicitis, either of the initial or recurrent type, occurs during the course of the fever, merely as a coincidence. 3. A group in which appendicitis is the direct result of the specific inflammation involving the lymphoid tissue, with or without ulceration and perforation. 4. Lastly, a group in which appendicitis develops during the convalescence or later, and in which there appears to be some direct or indirect causal relation.

40. **Imperforate Rectum and Anus.**—Ashhurst reports twelve cases, and draws the conclusion that there can be very little room for doubt that a baby with an iliac anus is much less

apt to survive than one whose bowel terminates in the anal region. For this reason, and because the immediate mortality of the perineal operation is so much lower, the paramount importance of finding the rectum from the perineum instead of performing a primary colotomy can not be overestimated.

Journal of the Arkansas Medical Society, Little Rock.

August 15.

41 Plea for the Early Diagnosis and Rational Treatment of Pulmonary Tuberculosis. D. C. Wait and A. E. Sweatland, Little Rock.
42 Plea for More Extensive Use of Modified Cow's Milk in Infant Feeding. C. K. Caruthers, Pine Bluff.
43 *New Treatment for Placenta Prævia Centralis. W. H. Miller, Little Rock.
44 Umbilical Hernia. T. F. Kittrell, Texarkana.
45 Devices of Charlatans, or the Black Art in Medicine. L. H. Morphew, Stuttgart.
46 Surgery of the Rectum. A. E. Cox, Helena.

43. **Placenta Prævia Centralis.**—Miller points out that it is a well-known fact that in cases of central implantation of the placenta, pregnancy is almost invariably terminated before full term, frequently at a sacrifice of both mother and child. The child is so often lost that it hardly enters into the consideration of the treatment. After the death of the fetus, separation of the placenta from its attachment at once begins, with the result that there is less hemorrhage in cases of immature labor or miscarriage in which death has preceded the expulsion of the fetus, than when it is born alive. This led Miller to the view that if the death of the fetus could be secured long enough before attempting its delivery, there would be less bleeding, and consequently, less danger to the mother. He, therefore, devised the following operation, which he has twice practiced successfully: The patient being anesthetized, a pair of sharp-pointed dressing forceps is passed through the placenta and an opening is made large enough to admit the index finger with which the physician feels the cord, brings it through the opening and ligates it. A tampon is inserted in the cervix and vagina and allowed to remain for twelve hours, after which part of the tampon may be removed to see if it is effectively controlling the hemorrhage; if so another tampon is placed in the vagina. Uterine contraction may be stimulated by the large doses of quinin and ergot, and the os will be sufficiently dilated to allow the fetus to pass if contractions are not stimulated after waiting twenty-four or thirty-six hours after ligating the cord. Enough separation of placenta has taken place to allow of its being detached without hemorrhage. The opening in the placenta is enlarged sufficiently to enable the physician to grasp the child. The lower extremity is seized with the fingers, or the head or any part with a pair of large dressing forceps, and the child is pulled through the opening and delivered.

Surgery, Gynecology and Obstetrics, Chicago.

August.

47 *Prophylaxis of Venereal Disease from the Standpoint of the Gynecologist. C. Cleveland, New York.
48 *Scopolamin-Morphin Anesthesia in Obstetrics. F. S. Newell, Boston.
49 *Pubiotomy in America. H. D. Fry, Washington, D. C.
50 *New Methods of Version in Transverse Presentations. A. F. A. King, Washington, D. C.
51 Study of Uterosacral Ligaments. I. S. Stone, Washington, D. C.
52 Prophylactic and Curative Treatment of Ophthalmia Neonatorum. E. B. Cragin, New York.
53 *Use of Laxatives in After-Treatment of Laparotomies. H. T. Byford, Chicago.
54 *Method of Closing Laparotomy Wounds. S. C. Gordon, Portland, Me.
55 After Treatment of Abdominal Section. J. M. Baldy, Philadelphia.
56 *Length of Rest in Bed After Abdominal Operations. H. J. Boldt, New York.
57 *Eserin Salicylate as Prophylactic Against Atony of Bowels. H. N. Vineberg, New York.
58 *After-treatment of Abdominal Sections. A. L. Smith, Montreal.
59 Method of Closing Abdominal Suture by Incison. C. A. Kirkley, Toledo.
60 *Comparative Advantages of Catgut and Silver-wire Sutures for Closing Fascia After Abdominal Incision. H. Robb, Cleveland.
61 *Incision of Anterior Uterine Wall for Chronic Inversion of Uterus. R. Peterson, Ann Arbor, Mich.
62 *Inversion of Vagina. P. A. Harris, Paterson, N. J.
63 *Induced Labor and Delivery by Abdominal Section. E. P. Davis, Philadelphia.
64 *Cystic Lymphangioma of Gastrocolic Omentum. W. F. B. Wakefield, San Francisco.
65 Opening Cranial Cavity for Removal of Tumors. J. Frank, Chicago.

47.—Abstracted in THE JOURNAL, June 1, 1907, page 1895.

48. **Scopolamin-Morphin Anesthesia in Obstetrics.**—Newell reports the results of the experience of 123 new cases of scopolamin-morphin anesthesia in labor which strengthen the opinion formed in his previously reported series of 41 cases, that certain definite results can be counted on when the proper preparation and method of administration of the drug are carefully carried out. The unevenness of the results in the previous series is ascribed to a definite change that takes place in scopolamin in solution. In the first series, the stock solution was used as long as it lasted; in the present series, 1/10 grain Merck's scopolamin hydrobromid and 2½ grains morphin sulphate were made into a stock solution every fourth day. The following conclusions seemed to be definitely proved:

Ninety per cent. of the patients treated have reacted well to the anesthetic, and in no case were bad results noted.

1. The great majority of the patients reacted markedly to the dose described, practically the only failures being in patients where an old solution, 7 to 8 days old, was used to test its value.
2. The pain of labor was markedly reduced, in some cases so much so that the labor was called painless by the patient.
3. The recollection of pain endured was almost abolished.
4. Labor seems to have been definitely shortened, as well as made easier.
5. The necessity for operative interference has been distinctly reduced in this series of cases, as compared with the average number of operative deliveries in a similar number of patients not so treated.
6. No tendency to hemorrhage has been noted in any of our cases, and only rarely has undue relaxation of the uterus been observed.
7. No bad effects of any sort have been noted whether in the heart, respiration, or pulse.

The author gives reasons for insisting that in effect at any rate scopolamin and hyoscin are not identical, whatever they may be from a chemical standpoint. He refers to the series of 1,000 cases reported by Gauss, and quotes his precautions as follows:

1. The drug must not be given until labor pains of a certain frequency and strength are present. (In our series we only employed the drug when pains were occurring at 5 minute intervals or oftener.)
2. When the pains are irregular and feeble the drug should be considered as contraindicated.
3. The dosage, in his opinion, can be definitely gauged by the patient's powers of perception and memory of what was going on about her, and he tests this from time to time by questioning the patient.

It is admitted that in patients physically weakened and unfit the measure may be of some danger and most untoward results have been in cases of this kind. Newell is convinced that in scopolamin-morphin we have an efficient means of controlling the pain of labor, which is practically safe when ordinary precaution is taken in its use.

49, 50.—Abstracted in THE JOURNAL, May 25, 1907, page 1809.

53, 54, 56, 57, 58, 60.—Abstracted in THE JOURNAL, June 1, 1907, page 1894.

61, 62, 64.—Abstracted in THE JOURNAL, June 1, 1907, page 1895.

63.—Abstracted in THE JOURNAL, May 25, 1907, page 1809.

New Orleans Medical and Surgical Journal.

July.

66 Methods of Staining and Cultivating the Gonococcus. H. G. Spooner, Boston.
67 Recognition of Early Primary Cases of Yellow Fever. E. M. Dupaquier, New Orleans.
68 Mosquito Doctrine of the Yellow Fever Etiology. C. J. Finlay, Havana, Cuba.
69 Pruritus. J. F. Buquol, Colomb.
70 Abortion of Pneumonia. V. Lehmann, Hahnville.
71 How to Meet Tympany and Colitis in Typhoid. E. M. Dupaquier, New Orleans.
72 Anatomy and Physiology of the Adrenals. A. R. Trahan, Lafayette.
73 Case of Post-typhoid Sepsis, with Quick Recovery. E. M. Dupaquier, New Orleans.
74 President's Address of the Medical Society of the State of Louisiana. H. B. Bruns, New Orleans.
75 The Church and Medicine. E. de LaMoriniere, New Orleans.
76 Tic Douloureux Treated by Osmic Acid Infection. H. Dupuy, New Orleans.

St. Paul Medical Journal.

July.

77 Application of Physical Chemistry to the Doctrine of Immunity. S. Arrhenius.
78 Osmotic Pressure and Electrolytic Dissociation. A. Schwyzer, St. Paul, Minn.
79 Clinical Teaching of Surgery. H. J. O'Brien, Minneapolis.
80 Indicanuria. W. C. Richards, Sanborn, Minn.
81 Diseased Tonsils and Their Removal with Scissors. H. E. Hunt, St. Paul.

82 Case of Broken Neck. A. A. Law, Minneapolis.
83 Physical Chemistry in the Service of Medicine. R. O. Beard, Minneapolis.
84 Use of Lactone in Preparation of Milk for the Feeding of Infants. J. T. Christison, Minneapolis.

American Journal of Urology, New York.

July.

85 Symptomatology of Malignant Disease of the Parenchyma in Adult. E. Garceau, Boston.
86 Case of Acute Metastatic Gonorrheal Myositis. C. G. Cumston, Boston.
87 Occasional Fallaciousness of the Diagnosis of Enlarged Prostate Made from Digital Examination Through the Rectum. G. MacGowan, Los Angeles.
88 Treatment of Infectious Pyelonephritides. (Continued.) H. Juy, Paris, France.

Buffalo Medical Journal.

July.

89 The Need of a Trained Microscopist in Every Community. W. C. Krauss, Buffalo, N. Y.
90 Physician Civilian. C. E. Low, Pulaski, N. Y.

Denver Medical Times, Denver, Colo.

July.

91 The Relation Between the Mouth, the Eyes and Ear. M. Black, Denver.
92 Alarming Hemorrhage in Quinsy. R. Levy, Denver.
93 Improvement of the Voice from Tonsillotomy. D. S. Neuman, Denver.
94 Medical and Surgical Treatment of Traumatic Cataract. G. F. Libby, Denver.
95 Nuclear Ocular Paralysis. E. W. Stevens, Denver.
96 Chancroidal Conjunctivitis. J. D. Crisp, Denver.
97 As Others See Us. J. Burke, Manitowoc, Wis.
98 Laboratory Diagnosis for the Practitioner. (Continued.) J. C. Todd, Denver.

Utah Medical Journal, Denver, Colo.

July.

99 President's Address Before the Utah State Medical Association. F. Clift, Provo, Utah.
100 Toxemia of Pregnancy. E. H. Smith, Ogden, Utah.
101 Asthma. R. J. Smith, Schenectady, N. Y.

Albany Medical Annals.

July.

102 Insanity and Crime. J. B. Chapin, Philadelphia.
103 Résumé of Experience of the Newark City Laboratory. R. N. Connolly, Newark, N. J.
104 Infant Feeding. F. J. Resseguie, Saratoga Springs, N. Y.
105 Théophraste Renaudot, Physician, Philanthropist and Journalist. C. G. Cumston, Boston.

Mississippi Medical Monthly, Vicksburg.

July.

106 Mental Aberration due to Pressure. B. B. Martin, Vicksburg.
107 Sequelæ and Treatment of Biliousness. F. M. Brougher, Belen.
108 Report of Peculiar Case with Request for Diagnosis. H. L. Walker, Clarksdale.
109 Bronchopneumonia in Children. G. S. Johnston, Dublin.

Journal of Outdoor Life, Trudeau, N. Y.

July.

110 Detection and Treatment of Tuberculosis Among Factory Employés in Providence, R. I. F. T. Fulton, Providence.
111 The Tuberculosis Campaign. L. Farrand, New York.
112 Health Rules for Workers. J. Walsh, Philadelphia.

The Ophthalmic Record, Chicago.

July.

113 Double Perforation of the Eyeball by Iron and Steel. W. M. Sweet, Philadelphia.
114 Inaccuracies of Test Lenses. W. G. M. Byers, Montreal, Canada.
115 Delayed Development of the Lachrymal-Nasal Duct. E. Jackson, Denver.
116 Treatment of Trachoma. J. Bordley, Jr., Baltimore.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

August 17.

1 *Effects of Respiration on the Circulation. P. W. Williams.
2 *Prodromal Period of Some of the Infectious Diseases. E. W. Goodall.
3 *Bottle-Maker's Cataract. W. Robinson.
4 Case of Congenital Obliteration of Bile Ducts in Which There Was Fibrosis of Pancreas and of Spleen. J. G. Emanuel.
5 *The Ringworm Question in Elementary Schools. P. S. Abraham.
6 *Transplantation of the Ureters. T. V. Armugam.
7 Diuretic Action of Theosine Sodium Acetate. H. Campbell.
8 *Acquired Syphilis in Infant With Transmission to Mother. J. A. Nixon.

1. **Effects of Respiration on Circulation.**—Williams considers the pulsus paradoxus and says that it is a question whether these respiratory undulations are due to respiratory pump action, acting on the heart and intrathoracic vessels, or to nervous impulses influencing the heart and vessels; in other words, are they myogenetic or neurogenetic or both? When he was physician in charge of Clifton College, and had to examine every new boy entering the school, he was astonished to find that respiratory undulations were so obvious as to be readily perceived by the finger on the radial artery in a large proportion of the most healthy specimens of English boys particularly on their taking deep inspirations. He soon learned that so far from indicating an abnormal condition, well-marked respiratory undulations in the pulse implied, if anything, that the boy would make a good sportsman. He cites one observation in particular and states that such observations convinced him that the pulsus paradoxus met with in laryngeal obstruction is merely a physiologic phenomenon, or at any rate a pathologic exaggeration of a physiologic condition. Sir James Barr (*Brit. Med. Jour.*, April 20, 1907, page 913), has adduced experimental and clinical evidence with a view to proving that the pulsus paradoxus is amply accounted for by such respiratory variations in intrathoracic pressure alone. Williams' inquiry is directed toward ascertaining whether there is not another factor in their production. His findings are stated as follows: The effect of respiration on the circulation is exceedingly complex, resulting from mechanical factors introduced by the pump action of inspiration and expiration, and from impulses generated in the bulbar cardioinhibitory and vasomotor centers coincident with the respiration impulses; and the effects vary, according to the quickness or slowness of respiration, whether it be natural and deep, or forced, obstructed or free; while the strength of the heart beat, arterial tension, the activity of the bulbar centers and, we may add, the action of the abdominal muscles, the splanchnic area, and even the degree of oxygenation of the blood—all have varying influences in determining the final results. As the relative dominance of these different factors is so variable, the results as shown in pulse tracings are also inconstant. In children, as compared with adults, the spinal centers are unstable and reflexes overactive. Hence, in young individuals, although their chest walls are more pliable and less fitted to overcome atmospheric pressure, on deep inspirations the bulbar centers are very prone obviously to affect the frequency and force of the pulse; and when the larynx or main bronchi are obstructed the forcible inspiratory impulses often result in the so-called pulsus paradoxus. That these effects on the pulse are wholly due to cardioinhibitory or vasoconstrictor centers is hardly possible, but they are important, and Williams considers them the dominant factors.

2. **Prodromal Period of Acute Infectious Diseases.**—Goodall considers cases of some acute infectious diseases having initial symptoms either unusual or not sufficiently noted in the textbooks. He suggests that occasionally there may be symptoms, even in the incubation period, especially at its commencement, or immediately after the time when the attacking microorganism obtains an effective entrance into the patient's body, and cites in this regard a case of tonsillitis, and another of severe headache and pains, both in nurses, in which these symptoms apparently marked the moment of attack. He points out that initial symptoms are more to be expected in diseases with long than in those with short prodromal periods, and considers in some detail the prodromal symptoms of scarlet fever, diphtheria, German measles, measles, varicella and typhoid.

3. **Bottle Makers' Cataract.**—Robinson refers to the evidence previously adduced by him (*Brit. Med. Jour.*, Jan. 24, 1903), to show that the makers of ordinary heavy metal bottles—for example, wine, whisky and beer bottles, though not flint bottles, such as medicine bottles—are subject to posterior cortical cataract, due to the excessive heat, to which the eyes of a bottle finisher are exposed while at work. Professor Snell having arrived at a conclusion unfavorable to Robinson's theory, Robinson has extended the field of his inquiries, the results of which, he asserts, fully confirm his first statement. He emphasizes the fact, however, that his thesis applies only to ordinary bottles, the mode of working being totally different in flint bottle work. He also explains Professor Snell's failure by the fact that if a man's sight is known to fail so that he

overlooks many defects, he is liable to dismissal; consequently, an inquiry conducted among the men working is misleading, because those who are afflicted are hardly likely to submit to examination. Robinson's inquiries were made among men already disabled by work, with the assistance of the secretaries of various trade societies. Bottle makers' cataract differs from the ordinary posterior cortical cataract in the following points: 1. Bottle finishers' cataract is a primary cataract, there being no posterior mischief, except sometimes disturbance of retinal pigment, and when it is successfully removed the sight is good, though the workman is rarely able to resume work as a finisher owing to the loss of power of accommodation. At its commencement it is like a cobweb in structure (and best seen with a + 10 or a + 12 lens by direct examination) and saucer-shaped, owing to the opacity being immediately within the posterior capsule. The outline is irregular and not radial or rosette shaped. 2. Ordinary posterior cortical cataract is one secondary to disease of the vitreous, chorioid or retina and, consequently, frequently occurs in the young, and after its removal the sight is bad. Moreover, the form of this cataract is at first rosette shaped or stellate, its center corresponding to the posterior pole of the lens, while its rays are directed radially toward the periphery (Fuchs). Williams recommends that the men should wear dark-colored spectacles or goggles while at work, as glass intercepts 30 per cent. of heat waves, and dark glass many light waves also. This measure seems to have had good results where adopted. He also recommends structural alterations of the holes in which the finishers and gatherer work, to avoid the men being exposed to the glowing sea of glass.

5. **Ringworm in Schools.**—Abraham states that since January, 1907, 264 cases of ringworm in school children have come under his care. The prevalence of the disease among metropolitan school children and the large number of elementary schools that are, or recently have been, contaminated with ringworm, lead him to insist on periodical and frequent examinations of the children, by specially trained medical men—not by nurses—and he further submits that the responsibility of the treatment of an unfortunate child who has presumably contracted a contagious skin disease at the government school should also be undertaken by the state.

6. **Transplantation of the Ureters.**—Armugam reports a successful case of extraperitoneal transplantation of the ureters into the rectum, for extroversion of the bladder. The patient was able to retain urine in the rectum from three and one-half to four hours by day, and all night.

8. **Acquired Syphilis in Infants.**—Nixon describes the case of an infant girl who developed at 10 months secondary symptoms clearly luetic. The child infected the mother at the breast. The origin of the probable chancre of which the scar was visible on the child's lower lip, and of which there was a history at 8 months of age, remains unexplained. The mother attributed the disease to vaccination, but vaccination took place at 3 months and no evidence was forthcoming of any accident then.

The Lancet, London.

August 17.

9 *Principles of Vaccine Therapy. A. E. Wright.
10 *Medical Science and School Hygiene. J. W. Byers.
11 *Cleido-cranial Dysostosis. J. H. Abram.
12 Case of Carcinoma of Both Ovaries. M. P. Kerrawalla.
13 *Continuous Administration of Fluids by Rectum in Acute General Peritonitis. B. G. A. Moynihan.
14 *Hypopharyngoscopy. H. S. Barwell.
15 Case of Thyroid Tumor. W. G. Sutcliffe and A. F. M. Powell.
16 Tuberculosis Among School Children. T. N. Kelynack.

9.—This article appeared in THE JOURNAL, Aug. 10-17, 1907.

10. **School Hygiene.**—Byers considers the influence of medical science on pupil and teacher, and urges the teaching, both by example and precept, of the ordinary laws of health and temperance; the teaching of girls from 10 to 13 of the elementary truths as to the care of infants, which will assist in checking the terrible waste of infant life; physical exercises and breathing exercises not only in the gymnasium, but in the school; and ample time for games and athletic exercises. He particularly speaks of the necessity of games as tending to inculcate the sinking of personal ends and ambitions for the sake of the team, of which the individual constitutes only a part—"playing the game," as we express it; submission to discipline and even self-sacrifice; the acquisition of command over temper, and when played in the true spirit, the development of many desirable qualities, such as courtesy and generosity toward opponents. He deprecates professionalism, and this, and not the athletics themselves, should be the real object against which the present outcry should be directed.

11. **Cleido-Cranial Dysostosis.**—Abram reports the case of a boy 16 years of age, having retained six temporary teeth and having only fifteen permanent teeth; four feet and half an inch in height and weighing 64 pounds, in whom the clavicles were almost completely absent on both sides, a cartilaginous rudiment only existing on either side. Genital development is puerile; the boy is mentally intelligent, and has chubby, rosy cheeks. His gait is waddling. The absence of the clavicles is not noticeable without examination. There is no hereditary element in this case, but the mother was married at 16, three months after a severe illness, and was only 17 years of age at the boy's birth; Abram thinks, therefore, that some weight may be attributed to the mother's illness as a factor in the cause of the boy's deformity. The father is tall and well formed, while the brothers and a sister all have well-formed clavicles.

13. **Continuous Administration of Fluids in Peritonitis.**—Moynihan confirms the remarkable results, described by Leconte and J. B. Murphy, due to rectal administration of saline solution in acute peritonitis consequent on appendicitis. He has treated 19 consecutive cases of acute general peritonitis due to appendicitis, with only two deaths, and attributes this result to continuous administration by the rectum of saline solution, for from two to four days. In partial and complete gastrectomy he has found it valuable. To avoid kinking of the rubber tube, he uses a pewter rectal tube, one foot in length and half an inch in diameter, with bulbous extremity pierced with several holes. A Sahli's flask is used, holding from three to four pints of saline solution, and closed by a rubber stopper with three openings, respectively for an air pipe, a thermometer and a pipe for connection by the rubber tube with the rectal tube. The solution should be kept at from 100 to 102 F. The flask is placed in a pan of hot water from three to six inches above the patient's rectum, and is kept warm with a spirit lamp. Not more than one pint and a half, or at most two pints, should be introduced during the first hour; subsequently, one pint an hour. The patient's comfort is the guide. Moynihan describes the effects as follows: "If the case is one of acute general peritonitis, the patient, who looks livid, whose eyes are sunken, whose skin is moist and cold, whose mouth is so parched that his tongue can hardly move, begins in a few hours to look ruddy and 'clean,' his mouth is moist, his eyes are bright, and all his aspect is one of comfort and contentment. The pulse gains volume and improves steadily in character; urine is passed in large quantities, and the skin keeps moist. Not a few patients say that they feel very hot, and some of them perspire freely."

14. **Hypopharyngoscopy.**—Barwell reports a case of epithelioma of the arytenoid in which it was necessary to examine the pharynx immediately behind the larynx. He adopted von Eicken's method, passing a stout laryngeal probe, covered with moistened cotton wool, after cocainization, over the epiglottis and below the cords, and making forward traction on the cricoid. Extensive involvement of the pharynx thus discovered contraindicated removal.

Indian Medical Gazette, Calcutta.

July.

17 *Smallpox in Calcutta. J. C. Vaughan.
18 *A Plea for Scraps. J. R. Adie.
19 Flea-Killing Power of Various Chemicals. R. D. Saigol.

17. **Convection of Smallpox.**—Vaughan, as the result of an elaborate examination of the incidence of smallpox in Calcutta, comes to the conclusion that the very remarkable freedom from attack of the population of patients, students, staff and servants, and the latter's children, in the smallpox wards of the Campbell Hospital affords a strong argument against aerial convection as one of the principal influences to be dreaded as emanating from smallpox hospitals.

18. **Plea for Scraps.**—Adie puts in a plea to practitioners to collect culicidæ, biting and sucking flies, fleas, bugs, lice, ticks; to hunt in their stomachs for parasitic forms, e. g., flagellates, etc., and to work out the life cycle and infection cycle of various organisms, as a hobby and pastime that may be not only interesting, but productive of unexpected scientific results.

Clinical Journal, London.

August 7.

20 Intrathoracic Aneurisms and Tumors. F. Taylor.
21 Acute Appendicitis. L. A. Bidwell.
22 Heart Affections Without Murmurs. W. Broadbent.

Medical Press and Circular, London.

August 7.

23 *Treatment of Suppurative Otitis. R. H. Woods.
24 *Plea for Accuracy of Thought in Medicine. W. H. White.
25 Care of Tuberculous Children. T. N. Kelynack.
26 Determining Cause of Formation of Nasal Polypi. E. S. Yonge.
27 *Co-ordination of Public Medical Services. A. Newsholme.
28 Milk in Relation to Human Tuberculosis. H. E. Armstrong.

23. **Suppurative Otitis.**—Woods notes that otitis media adopts one of two courses. 1, The discharge diminishes, ceases in a week or two, and the perforated drum heals; 2, the discharge becomes fetid and continues indefinitely. An investigation during an epidemic of measles and scarlet fever led to the observation that all acute cases had only one kind of organism, while the pus from chronic cases invariably contained a great variety. He was led to conclude, therefore, that all cases of ear suppuration are acute at first, becoming chronic only by reinfection, and that a chronic otitis is rarely established when proper treatment is carried out from the onset. The inoculation of the pus through the use of the finger to allay irritation in the acute stage is the commonest source of origin. To prevent the transition from acute to chronic suppuration he recommends the frequent removal of the discharge by syringing with sodium bicarbonate solution, 2 drams to a pint, thorough drying, and the filling of the ear with a saturated solution of boric acid in equal parts of alcohol and water (the patient being in the recumbent position on the opposite side) and allowing a quarter of an hour to elapse before allowing the drops to run out.

24. **Accuracy of Thought in Medicine.**—Discussed editorially in THE JOURNAL, Aug. 10, 1907, page 498.

27. **Co-ordination of Public Medical Services.**—Newsholme contends that the scope of preventive medicine has passed beyond germ-borne diseases, and now extends to such early treatment as will obviate severe or protracted results in any disease, and that the community as well as the individual is interested, inasmuch as poverty and disease act in a vicious circle. The conditions of private medical practice among the poor are harassing, and unsatisfactory to both patient and physician, for: 1, diagnosis is belated; 2, treatment is curtailed by expense; 3, there is waste of time in dispensaries, etc.; 4, there are no co-ordinated arrangements for medical consultations; 5, there is waste of information as to disease incidence, and 6, as to conditions conducing to disease. The co-ordinated arrangements that follow when notification of consumption is successfully at work show that the defects can be overcome, but they are not overcome when the organization for medical supervision is separate from the general public health administration of the district, as in the case of scholars. The home is the point at which evils discovered by school inspection must be attacked and controlled. Parents will not tolerate dual medical examinations for school purposes, while neither school physician nor medical officer of health fulfills the complete needs. Newsholme urges the appointment of district physicians by each municipality and their co-ordination with the mechanism of preventive medicine. "The present state of medical service is evidently transitional; neither provident dispensaries nor cries against hospital abuses and 'undercutting' practice, have been able to hinder the steady progress toward the treatment of disease at the expense of the community, nor is it possible to arrest this trend."

Dublin Journal of Medical Science.

August.

29 Report of Rotunda Hospital. E. H. Tweedy, R. Holmes and R. J. Rowlette.
30 Case of Acute Metastatic Gonorrheal Myositis. C. G. Cumston, Boston.
31 Blackwater Fever. C. T. Costello.

Glasgow Medical Journal.

August.

32 *Electrotherapeutics. H. L. Jones.
33 Tumors of the Cecal Region. J. H. Pringle.
34 Sarcoma of the Nose. W. Downie.

32. **Electrotherapeutics.**—Jones considers that results of a first-class kind may be expected to be gained from ionic medication for the introduction of drugs by means of the continuous current. After a summary of the theory Jones points out that the treatment of local conditions is the best field for the use of this method. It is superior to the hypodermic method, for the ions introduced electrolytically penetrate to every connecting element of the tissues, that is to say, to the actual protoplasm of the cells of the part traversed by the current. He describes its application in lupus, with zinc, copper, fuchsin and anilin hydrochlorid; in rodent ulcer, with zinc sulphid or chlorid; in diphtheritic foci, with copper ammonio-sulphate; in various septic conditions with copper and zinc, and in intrigeminal neuralgia with salicylic acid.

Presse Médicale, Paris.

35 (XV, Nos. 56-61, pp. 441-488.) *Rapid Form of Epileptic Dementia in Adolescence. (Démence épilep. de l'adoles.) J. and R. Voisin.
36 *Oriental Boil and Its Parasite. Wright's Piroplasma. (Bouton d'Orient.) L. Nattan-Larrier.
37 *Pathogenesis of Puerperal Phlegmasia Alba Dolens. G. Keim.
38 Early Diagnosis in Cancer of the Cervix. (Cancer du col utérin.) R. de Langenhagen.
39 *Clinical Examination of the Lumbar Region. P. Desfosses.
40 *Liver in Heart Disease. (Foie cardiaque.) A. Bauer.
41 *Form of Labia Minora. (Forme des petites lèvres. Le pli paranymphéal. Les plis paracommisuraux.) F. Jayle.
42 *New Conception of Hysteria. (Hystérie). Paul Hartenberg.
43 *Sclerotic Conditions of the Ear in Relation to Arteriosclerosis. (Etats scléreux otiques.) Souleyre.
44 *Anesthesia in Surgery of the Face. Barthélemy and Dufour.
45 Sporotrichosis. De Beurmann and Gougerot.

35. **Dementia in Epilepsy.**—The authors distinguish two forms of dementia occurring in epilepsy. One form is chronic in its course, appearing at an advanced stage of the disease and the result of the enfeebling effect of the repeated convulsive paroxysms on the mind. The other form appears about puberty and runs a rapid course with many of the features of dementia præcox. It may occur in three forms, hebephrenic, paranoiac and catatonic. The close relation of this form to dementia præcox is evident when it is remembered that both occur in subjects of hereditary degeneracy. A distinction in the symptoms occurring in epileptic patients is to be drawn between those which are immediately due to the convulsive attacks and those which occur as the consequence of the degenerate constitution of the individual and for which the epileptic seizure furnishes merely the occasion under which they manifest themselves. The authors regard the rapid form of dementia occurring in epileptics as due to the degenerative tendencies of the patient and as only provoked or accelerated in its manifestation by the convulsive seizures to which the individual is subject.

36. **Oriental Boil.**—Nattan-Larrier has had occasion to observe for some months an example of oriental boil, in the juice of which he was able to discover the piroplasma described by J. H. Wright, and to trace its relation to the different phases of the disease. Attempts to cultivate the organism and to inoculate animals were unsuccessful. The constant presence of this parasite in the lesions of oriental boil facilitates the diagnosis of this disease and serves to establish its identity with affections called by different names, such as Delhi boil and Gafsa boil, and to distinguish it from similar affections like ulcerating craw-craw which do not contain this organism. Nattan-Larrier observed that in the active stage of the boil the parasites were numerous and enclosed in phagocytes and were in the stage of proliferation; in a later stage, when the disease was receding, the macrophages disappeared and lymphocytes took their place, while the parasites became fewer. At the stage of cicatrization the piroplasmata were still fewer and showed signs of degeneration. They could be found, however, in apparently healed patches. They could also be discovered in the blood in the neighborhood of the lesion, but not in the general circulation. It is probable that the disease is conveyed from man to man by some blood-sucking insect.

37. **Phlegmasia Alba Dolens.**—Keim notes that although most of the complications of the puerperium have greatly diminished with the introduction of aseptic methods, thrombosis of the veins of the leg still occurs in its former ratio or has even increased in frequency. Doubt, therefore, arises as to the agency of infection in producing this lesion, and the author reviews the theory of coagulation of the blood and shows that there are conditions in the puerperal uterus which furnish chemical stimulants to the coagulation of the blood in the absence of any infection. This tendency to coagulation is increased by the inactivity of the liver, whose normal office is to oppose undue coagulability of the blood. Keim believes that injections into the uterus, especially of solution of mercuric chlorid, increase the tendency to coagulation. According to him phlegmasia alba dolens may occur after delivery in consequence of the insufficient action of the liver, or from the presence of débris in the uterus or in consequence of injections. Precautions to avoid these conditions are, therefore, indicated. He has also noted that this condition is frequently associated with membranous enteritis and believes that an aseptic phlebitis of the uterine veins may begin before labor from the autointoxication due to intestinal disease. He thinks this condition is indicated by a pain in the side of the abdomen. This aseptic phlebitis may, he thinks, lead to embolism or may extend to the veins of the leg, producing milk leg. The obvious inference is that the practitioner should give especial attention to the condition of the intestines during the latter months of pregnancy.

39. **Examination of the Lumbar Region.**—Desfosses describes the anatomic peculiarities of the lumbar region and lays stress on the importance of a careful examination in case of disease, especially when the spinal column or the hip joint is affected. The deviation from the straight line may be the sign of scoliosis, or when lordosis is present it may be the result of weakness or paralysis of the thoracic or abdominal muscles. The degree of curvature which is pathologic is difficult to determine. The curve of the lumbar spine appears to have been less in ancient peoples than in the moderns, and it is less pronounced in the primitive races of the present time and in the blond types of northern Europe than in France and the more southern countries. The women and girls of large cities, he states, show a pronounced curve that is attributable to weakness of the spinal and abdominal muscles. Lordosis occurs both from atrophy of the abdominal muscles and from that of those of the spine. The two types differ in appearance. When the abdominal muscles are at fault the buttocks become prominent and the chest is thrown forward; when the spinal muscles are affected the shoulders are thrown backward and the buttocks are flattened so that a line drawn through the most prominent vertebral spine falls far behind the sacrum. The lordosis of the lumbar region is not merely a matter of esthetics, but according to the observations of Duchenne, those women who presented this deformity are subject to greater distension of the abdomen during pregnancy and suffer more from flaccidity of the abdominal muscles after delivery. To prevent it care should be taken to secure a good muscular development for the young girl.

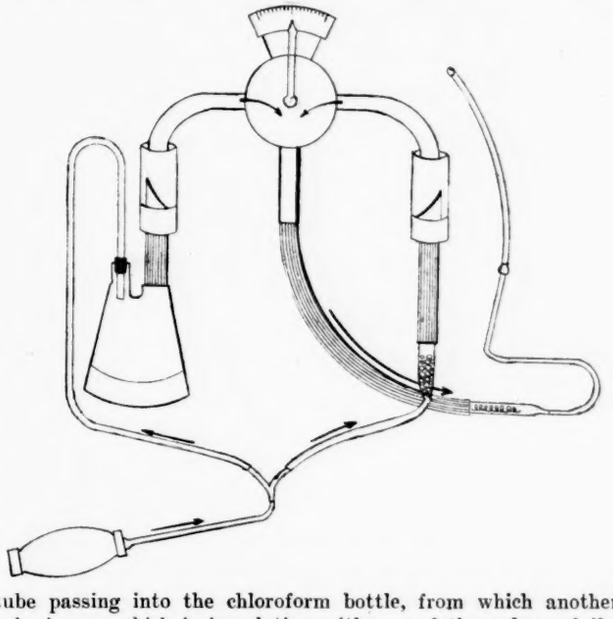
40. **The Liver in Heart Disease.**—Bauer continues his account of the pathogenesis of the changes of the liver in heart disease and concludes that there is no valid reason for assuming a difference between the cells surrounding the radicles of the hepatic vein and those surrounding the portal vein. The radicles of the portal vein resist the expansive influence of the reflux of blood for a longer time than those of the hepatic vein because they are supported by the capsule of Glisson, but they yield gradually to the dilating force.

41. **Form of the Labia Minora.**—Jayle finds frequently a paranymphal fold between the labia majora and the labia minora which may take on the form of a lateral accessory labium minus. Similar folds exist about the commissure which may develop into posterior labia majora. The fourchette corresponds to the commissure of the labia minora or to the prolongation of a paranymphal fold, or to the commissural folds.

42. **Hysteria.**—Hartenberg reviews the symptomatology of hysteria established by Charcot with the stigmata of anesthesia, restricted visual field and peculiar mental features, and concludes that the great clinician built his theory on a mistaken basis of fact. He notes that Bernheim of the Nancy school and Babinski of the Salpêtrière both conclude that many of the classic stigmata are the result of suggestion, either unconscious on the part of the physician or in the form of autosuggestion by the patient. Thus the anesthesia and restriction of the field of vision are not primary symptoms; they are the result of suggestion. Other symptoms present nothing characteristic. There is no state of mind peculiar to hysteria unless it be an unusual susceptibility to suggestion. Since these two authors agree in their rejection of the principal stigmata of hysteria it seems that a new series of observations must furnish the basis for a new conception of this remarkable condition.

43. **Sclerosis of the Ear and Arteriosclerosis.**—Souleyre calls attention to the reasons for believing that the otosclerosis of the labyrinth is of arteriosclerotic origin. The tension of the fluids of the labyrinth is found to correspond with that of the cerebrospinal fluids and of the blood, and it is probably the increased tension of this fluid which gives rise to the symptoms in otosclerosis. Such conditions should be treated locally by means which will cause an escape of the labyrinthine fluid into the blood or into the arachnoid spaces, and generally by remedies to reduce the general hypertension of the arteries. For the local measures he recommends vibratory massage.

44. **Anesthesia in Operations on the Face.**—In order to obviate the difficulties attending the administration of an anesthetic during an operation on the face Barthélemy and Dufour have constructed an apparatus, based on that of Harcourt, which is described as follows: A hand bulb is attached to a



tube passing into the chloroform bottle, from which another tube issues, which is in relation with one of the valves of the respiratory tube. The same hand bulb is connected directly with the other inspiratory valve; this one, therefore, allows only the passage of pure air. The proportion of pure air and of air charged with the vapor of chloroform is regulated by the index of the central disk on which the two currents play. These currents unite in a median tube which terminates in an ureteral sound of the Gelly pattern with caliber 18. This sound is introduced through the glottis into the larynx and does not hinder the free respiration of the patient around it. Complete control of the anesthetic mixture, which is absorbed *in toto* by the patient, is thus assured. When the bulb is in operation the mixture enters the trachea, and when the compression of the bulb ceases the patient breathes pure air. The air and the mixture are sterilized and dried by passing through absorbent cotton interposed in the respiratory tube. To spare the patient the disagreeable sensation of introducing the cat-

eter into the larynx and to obviate the occurrence of reflexes which might be dangerous, this apparatus should be used only to continue an anesthesia which has been established by ordinary methods. It permits the injection of pure air in case of need for artificial respiration; it is only necessary to set the index at 0. The apparatus has been used on the dog with entire success, and has been tried successfully in two cases in man. The attempt to induce anesthesia in man by passing the catheter merely into the pharynx was unsuccessful, as it is impossible with this apparatus to obtain a mixture of more than 2 per cent. of chloroform.

Wiener klinische Wochenschrift.

46 (XX, Nos. 25 33, pp. 753-1010.) Toxins of Paratyphoid and Their Neutralization with Typhoid Antitoxin (Paratyphusgifte.) R. Kraus and R. v. Stenitzer.
47 *Significance of Reduced Hydrochloric Acid Production in Diagnosis of Gastric Affections. (Bedeutung d. herabgesetzten Salzsäureproduktionsfähigkeit.). A. v. Torday.
48 Bronchoscopy for Foreign Bodies. (Fremdkörpern.) H. v. Schrötter.
49 Rudimentary Clavicles and Anomalies of Cranium. (Dysostose cleido-cranienne.) A. Fuchs.
50 Determination of Anthrax Bacilli on Horse Hairs. (Milzbrandbacillen a. Pferdehaaren.) A. Theodorov.
51 Specificity of Bacterial Precipitins. (Bakterienpräzipitine.) M. v. Eisler.
52 Paracelsus in Austria. F. Strunz.
53 Electrical Irritability of Motor Nerves in Tetanus. (Uebererregbarkeit d. motor. Nerven i. d. Tetanie.) F. Chvostek.
54 *Operations on the Pituitary Body. (Operationen a. d. Hypophyse.) L. Moszkowicz.
55 *Experimental Tuberculosis of Skin in Monkeys. (Exp. Hauttuberkulose bei Affen.) R. Kraus and S. Grosz.
56 Subcutaneous Squamous-celled Carcinoma of Gluteal Region (Plattenepithelkarzinom.) J. Richter.
57 *Disposition of Heterologous Antitoxins in Human Organism (Verhalten artfremden Antitoxins i. menschlichen Organismus). R. Dehne and F. Hamburger.
58 Study of the Blood in a Case of Croupous Pneumonia with Polycythemia Myelopathica, the Patient Having Been Splenectomized Previously. N. Schneider.
59 *New Operative Procedure for Anus Vulvo-vestibularis. (Neues Operationsverfahren.) E. Niessner.
60 Circumscribed Hypertrichosis of Back. W. Landau.
61 Experimental Cirrhosis of Liver on a Tuberculous Basis. (Exper. Leberzirrhose.) O. Stoerk.
62 Tuberculous Cirrhosis of Liver. (Tuberkulöse Leberzirrhose.) N. Jagic.
63 Chronic Inflammatory Tissue Changes in Experimental Tuberculosis. (Veränderungen i. Organgeweben bei Experimentaltuberkulose.) J. Bartel.
64 *Ultramicroscopic Blood Examinations During Fat Resorption (Fettresorption.) A. Neumann.
65 *Hebotomy. T. H. van de Velde.
66 Diagnosis of Rabies. (Lyssa.) E. Friedberger.
67 *Inflammatory Growth Caused by Foreign Body Diagnosed as Tumor. (Entzündung um Fremdkörper als Tumor Operirt.) J. Richter.
68 Case of Tenia Nana. E. Stoerk and O. Hahndel.
69 Estimation of Heart Energy. (Herzarbeit.) A. Strubell.
70 *Adduction-contraction in Coxitis. Adduktionskontraktur.) A. Saxl.
71 Occurrence of Trichonodosis. O. Kren.
72 *Snake-bite Poisoning. (Schlangenbiss Vergiftung.) Riehl.
73 Pathogenesis of Skin Changes in Scrofula. (Integumentveränderungen bei Skrofulose.) E. Moro.
74 *Resistance of Man to Anthrax. (Resistenz d. Menschen geg. Milzbrand.) K. Kreibich.
75 *Visual Disturbances and Blindness of Nasal Origin. (Sehstörung u. Erblindung nasalen Ursprungs.) O. Mayer.
76 Study of Circulation in Laboratory and Its Relation to Pathology and Therapeusis. (Kreislaufforschung u. Uebertragung auf d. Menschen i. d. Klinik.) Strubell.
77 *Bacteriologic Report on Three Cases of Cerebrospinal Meningitis. E. v. Hibler.
78 *Skin Symptoms of Pellagra. (Pellagrösen Hautsymptome.) P. Delaco.
79 Skin Eruptions Following Vaccination with Tuberculin According to Pirquet's Method. (Hautveränderungen nach Pirquetsche Reaktion.) M. Oppenheim.
80 Ehrlich's Diazo Reaction. M. Weiss.
81 *Hypertrophy of Right Ventricle. (H. d. rechten Ventrikels.) L. Kührt.
82 Value of Auscultatory Methods for Determining Blood Pressure. (Auskultatorische Methode d. Blutdruckbestimmung.) W. Ettinger.
83 *Spontaneous Gastric Fistula Caused by Gastric Ulcer. (Spontaner Magenfistel nach Ulcus Ventriculi.) G. Mann.

47. **Reduced Hydrochloric Acid.**—Torday emphasizes the fact that in order to make a diagnosis of gastric affections, it is absolutely essential to make a thorough chemical and microscopic examination of the gastric secretion and functions, because subjective symptoms, no matter how characteristic they may seem, are not to be depended on in any case of disease of the stomach. Gastric ulcer, gastritis, gastric neuroses and gastric cancer may each have identical clinical histories, but the laboratory findings are not the same. Hence the necessity of a laboratory examination. This is particularly true in gastric cancer, where so much depends on an early diagnosis. Finally, too much reliance should not be placed on the presence or absence of hydrochloric acid, because in many other affections of the stomach achylia gastrica is by no means an uncommon symptom, and gastric cancer does not always cause cessation of the secretion of the acid; and again, regurgitation of the intestinal contents into the stomach will neutralize the gastric juice and simulate achylia gastrica.

54. **Operation on Pituitary Body.**—Moszkowicz removes the hypophysis (the pituitary body) through the nasal route in a manner somewhat similar to Schlosser's method, but he performs the operation in two sittings and closes the bone defect at the base of the skull by means of a skin flap taken from the forehead. This flap of skin contains the angular artery and occipitofrontalis muscle of the left side. He has demonstrated experimentally the feasibility of the operation, but urges that cases for operation must be selected with great care and that no patient should be operated on after his subjective symptoms become severe. Naturally, he says, this will limit the number of operations, because few patients are willing to submit to an operation so long as the disturbance is not severe enough to cause much inconvenience or suffering.

55. **Experimental Tuberculosis of Skin in Monkeys.**—Kraus and Grosz were able to produce skin tuberculosis in monkeys with various strains of tubercle bacilli. Inoculation with bird and frog tuberculosis produced only slight changes. Typical tubercles were produced in each instance, but in the case of those tubercles following inoculation with the human tubercle bacillus there appeared to be but little tendency to breaking down of the tissue, and the pathologic changes were limited in great part to the site of inoculation.

57. **Disposition of Heterologous Antitoxins.**—Dehne and Hamburger found that for several days the antitoxin remains in the blood in an unchanged state, and that then the amount of antitoxin decreases very decidedly, usually more than one-half of the original amount. After this initial diminution the antitoxin disappears slowly, until after about three weeks it has disappeared from the blood entirely. The appearance of the serum disease is an indication of a decided diminution in the quantity of antitoxin and of passive immunity.

59. **Anus Vulvovestibularis.**—Niessner practically transplants the rectum and anus from their unnatural to their natural position, without injuring the vagina and without causing incontinence. The operation was done on a six-months-old girl with excellent results, so far as the operation was concerned. It is yet too soon to report final results, especially with reference to constriction or stricture of the rectum.

64. **Ultramicroscopic Blood Examinations.**—Neumann found that an examination of the number of Mueller's bodies or hemokonia after the ingestion of fat—butter—was of some value clinically to show the status of fat resorption. The number of these bodies was diminished in three cases of gastrointestinal disease, four cases of fever, and in four convalescents. Thus the state of the digestive apparatus can be determined in some measure by this means. Further studies are now being made by the author and a later report is promised.

65. **Hebotomy.**—Van de Velde considers hebotomy a valuable procedure not only in cases of narrowing of the pelvic outlet, but also in narrowing of the pelvic inlet. Furthermore, the pelvis is left in a condition that obviates the necessity of further operative procedures at subsequent pregnancies because the original indication for the operation is permanently removed. He has been able to demonstrate that the deficiency in the bone caused by the operation is filled in with a blood clot, a callus, and finally new bone in from six to eight months, thus restoring the original strength and stability of the bone.

67. **Inflammatory Growth Diagnosed as Tumor.**—Richter relates the case of a man who had suffered for a number of years with osteomyelitis. The man then acquired a left inguinal hernia, for which he was advised to wear a truss. Soon afterward he noticed a particularly painful spot just above the pad of the truss, for which, in time, an operation was advised on the supposition that the enlargement, which was palpable, was a tumor. The clinical diagnosis was Nelaton's

tumor. The tumor was of about the size of a fist. A radical operation was performed, the tissue removed, including the tumor, a portion of Poupart's ligament and a portion of the peritoneum. The sac of the hernia was used, in part, to close the defect in the abdominal wall, and with success. The sartorius muscle was also utilized in the usual manner as employed in femoral hernias. On incising the tumor it was found to contain three pieces of iron wire. These had caused an inflammatory growth which resembled a malignant growth so closely as to deceive the observer until the tumor was bisected. In a second case a splinter of wood caused a tumor in the bladder wall. The patient was a woman, but the splinter was assumed to have entered the bladder wall from the intestine, the latter being adherent to the bladder, and the omentum adherent to both the bladder and intestine.

70. **Adduction Contraction in Coxitis.**—Saxl is of the opinion that the adduction-flexion-contracture in coxitis is due, in the main, to an insufficiency of the gluteal muscles, this insufficiency being both relative and absolute; there is atrophy of the muscles and physiologic insufficiency. This condition, too, the author says, is responsible for the very frequent recurrences after redressment, even in cases where the after-treatment is carefully looked after. Saxl corrects the malposition outside of the joint by doing a subcutaneous, subtrochanteric osteotomy at the Roser-Nelaton line. The adductors and subspinal soft parts are tenotomized and the leg is placed in its correct position, slightly abducted. A plaster cast is then applied and the patient is placed in the Lorenz position. The foot is not included in the cast. After a few days the patient is allowed to walk about. The cast is removed in from eight to ten weeks, the leg portion after six weeks. After the entire cast has been removed a bandage is applied, embracing the pelvis and thigh, or a contra-lateral pelvic brace is used. The results from this method have been excellent during the three years during which it has been employed by the author.

72. **Treatment of Snake Bite.**—Riehl endorses the so-called Calmette treatment for snake bite, and describes a small pocket case with which woodsmen and foresters are provided so as to be in a position to render immediate service in such cases and not lose valuable time by traveling great distances seeking medical aid.

74. **Resistance Against Anthrax.**—Kreibich claims that resistance against infection with the anthrax bacillus is dependent entirely on the leucocytes.

75. **Blindness of Nasal Origin.**—Mayer reports the case of a woman aged 76, who for a number of years had suffered from empyema of the accessory sinuses, although the symptoms were not of such severity as to cause her to seek medical advice. Following an attack of coryza, she suddenly became blind in one eye, and vision in the other eye was reduced considerably. The maxillary, sphenoid and ethmoid sinuses were opened freely and irrigated, with the result that vision in the partially affected eye returned almost to normal, although no change was noted in the blind eye. Except for this blindness the patient felt well and was entirely comfortable. Mayer urges that the accessory sinuses be examined carefully in all cases of retrobulbar neuritis.

77. **Bacteriology of Cerebrospinal Meningitis.**—Hibler examined three cases. In one of these he found the *Micrococcus meningitidis* of Weichselbaum, but in the remaining two cases he found a coccus which resembled the *Micrococcus meningitidis* morphologically, but otherwise differed considerably. It resembled the gonococcus in its behavior in cultures, but the resemblance was not sufficient to warrant the positive statement that it was the gonococcus. The organism is deseribed fully.

78. **Skin Lesions of Pellagra.**—Deiaco reports a number of cases of pellagra to substantiate the statement that the skin lesions are by no means limited to the exposed parts of the body, but that they may also occur in parts not exposed to sunlight and atmosphere.

81. **Hypertrophy of Right Ventricle.**—Kührt places reliance in the diagnosis of this affection mainly on palpation. Indirect palpation, he says, will often disclose the peculiar nature of the systole when direct palpation fails to do so. A symptom of considerable diagnostic value is considered to be an accentuation of the first sound, palpable over the lower portion of the right heart.

83. **Spontaneous Gastric Fistula.**—Mann reports the case of a woman who had suffered from gastric ulcer for about fourteen years, without having had the condition diagnosticated. About a year ago she noticed a swelling in the left hypochondrium, and shortly afterward a few drops of a clear fluid were discharged from this swelling. A diagnosis of osteoperiostitis costalis was made and an operation was advised. As soon as the skin incision had been made it was found that the fistula was not connected with the ribs, and that remnants of food were mixed with the now mucoid fluid discharging from the fistula. The patient was treated expectantly, further operative intervention being contraindicated. She gradually regained good health, although the fistula did not close until Mann resorted to the use of large quantities of an alkaline powder (name not given) with which he dusted the edges of the fistula and neutralized the acid discharges. Under this application the fistula gradually closed until fluid was discharged only at rare intervals and then only a few drops at a time. Further treatment has not been decided on as yet. The patient is well, eats well and is engaged in her usual vocation. After the operation she was fed by rectum for several weeks, then through the gastric fistula, and finally by mouth, the consistency and variety of the food being increased gradually as it could be borne. Contrary to the usual rule, the fistula in this case was situated almost in the middle of the stomach rather than toward either end.

Deutsche medizinische Wochenschrift, Berlin.

84 (XXXIII, Nos. 25-26, pp. 993-1072.) Treatment of Venereal Diseases. (Geschlechtskrankheiten.) (To be concluded.) M. Joseph.
85 Pharmacology of Atoxyl. F. Croner and E. Seligmann.
86 Bier's Hyperemia. P. Sick.
87 *Pathologic Anatomy of Stomach and Duodenum in Typhoid. (Typhus abdominalis.) A. Proskauer.
88 *Simple Method for Obtaining Agglutination Reaction by Means of Stained Preparations. (Agglutinationsprüfung.) Gossner.
89 *Congenital Myotonia; Thomsen's Disease. te Kamp.
90 Simplified Trituration Apparatus. (Titrierapparat.) R. Goldschmidt.
91 New Aural Suction Apparatus. (Ohrsauger.) C. Leuwer.
92 Atropin-Quinin Injections in Hay Fever. Boesser.
93 New Principles in Construction of Roentgen-Ray Tubes. (Roentgenröhren.) Schaeffer.
94 Heating and Ventilation in Hospitals. Rietschel.
95 Testing Vision of Chauffeurs. (Sehprüfung.) W. Feilchenfeld.
96 Influence of Elasticity of Aorta on Pulse Pressure and Heart Action. (Aortenelastizität; Pulzdruck u. Schlagvolumen d. Herzens.) J. Strasburger.
97 *Idiopathic Cylindrical Dilatation of Esophagus. (Speiseröhre.) C. A. Ewald.
98 *Lactation Following Ovariotomy. (Milchsekretion nach Kastration.) D. Grünbaum.
100 *Discharge of Appendix by Rectum in Suppurative Peritonitis. (Abgang d. Wurmfortsatzes.) F. Groedel, Jr.
101 *Chair Shoulder Brace for School Children. (Orthopädisches Stuhlband.) R. Zuelzer.
102 New Remedies, Specialties and "Patent Medicines." (Geheimmittel.) F. Zernik.

87. **Typhoid Ulcerations in Stomach and Duodenum.**—In the case of typhoid reported by Proskauer, death was caused by a purulent peritonitis, which bacteriologically showed streptococci. No perforation of an ulcer or mesenteric gland could be found. Many typical ulcers were found in the stomach, duodenum and jejunum, but they appeared to be of more recent formation than those found in the cecum. The paratyphoid bacillus B was obtained in culture from these ulcers. The serum reaction was positive to this organism, but negative to the typhoid bacillus.

88. **Agglutination Reaction.**—Although the method described by Gossner is said to be intended for the use of the general practitioner, it is impossible to give a description of it within the usual limits of an abstract. Not much apparatus is required, but the technic is rather an extended one and apparently of such a character as to involve the expenditure of considerable time and require some skill on the part of the worker.

89. **Congenital Myotonia.**—te Kamp says that this disease is transmitted to males as well as to females, but in the former instances the incidence of the disease soon disappears; that is, transmission occurs for a longer time when females are affected than when the males of a family are affected.

97. **Idiopathic Dilatation of Esophagus.**—In Ewald's case the diagnosis was made *intra vitam* and was confirmed at the necropsy. The patient, a man, complained most of inability to retain food, which condition alternated with the ability to retain everything. A peculiar feature in the case was that often when the man vomited, he would emit food that had been ingested some days previously, the food taken more recently being retained. There was much belching and vomiting of blood at times. The cause of the dilatation was assumed to be a spasm of the cardia.

98. **Secretion of Milk After Ovariotomy.**—Grünbaum reports the case of a woman, 23 years of age, on whom he performed a hysterectomy, with complete removal of the adnexa, and an appendectomy. Nearly five years previously the patient had been delivered; the labor was normal; the patient nourished her baby, and no pathologic conditions occurred during the puerperium or during lactation. Later symptoms manifested themselves necessitating the performance of the operations mentioned. On the eleventh day after the delivery the breasts began to secrete milk, and this continued for some time. The breasts were considerably enlarged and on compression yielded large quantities of a fluid which on chemical examination was found to correspond with milk. A second patient was operated on for fibromyoma of the uterus; the adnexa were removed with the uterus. On the sixteenth day after the operation the breasts began to secrete milk, and this continued for four months. This patient was a nullipara. The author concludes that in most cases following the removal of the ovaries the breasts secrete a colostrum-like fluid or milk, independently of the histologic condition of the ovaries or whether the woman is or is not parous, but provided, always, that she is of child-bearing age. A review of twenty-one cases recorded in the literature convinces Grünbaum that this secretion occurs only when the ovaries are removed. These cases are reported in brief.

100. **Passage of Appendix by Rectum.**—Groedel records a case of this kind occurring in a man 62 years of age. The patient suffered for a number of years from the effects of heavy drinking, notably from symptoms of arteriosclerosis and angina pectoris. A suppurative peritonitis set in, presumably the result of the rupture of a previously walled off perityphlitis, and although operation was indicated, the age of the patient and his poor condition were deemed contraindications to surgical intervention. Symptomatic treatment was resorted to with a view to making the patient as comfortable as possible. Beginning on the tenth day, the patient passed a number of enteroliths, and on the sixteenth day he passed the appendix vermiformis, which measured 8 cm. in length. Thereafter the feces contained much pus, of a light green color. The patient died on the twenty-fourth day of his illness.

101. **Chair Shoulder Brace.**—Zuelzer describes a shoulder brace which is attached to the back of a chair and is intended to force children to sit up straight.

Berliner klinische Wochenschrift.

103 (XLIV, Nos. 20-25, pp. 621-792.) Tubercle Bacillus and Antituberculous Serum. A. Marmorek.
104 *Physical Therapy of Headache. (Physikalische Beh. d. Kopfschmerzes.) Riedel.
105 Unilateral, Congenital Blepharoschisis. (Spaltbildung i. oberen Augenlid.) L. Meyer.
106 *Sarason's Ozet Baths. (Ozet-Bäder.) P. C. Franze and L. Pöhlmann.
107 The Retention Catheter. (Verweilkatheter.) J. Vogel.
108 *Refraction Coefficient of Blood Serum. (Refraktionskoeffizienten d. Blutserums.) K. Engel.
109 Pulsation of Left Auricle and Its Significance. (Pulsation d. linken Vorhofes.) E. Rautenberg.
110 Development of Basal-Celled Cancer of Skin. (Basalzellenkrebs.) H. Coenen.
111 *Quinquaud's Sign in Abstainers, Alcoholism, Hysteria, Tabes and Other Nervous Diseases. (Quinquaud's Phänomen.) L. Minor.
112 Practical Criminal Psychology. (Kriminalpsychologie.) H. Marx.
113 Spirilla in Recurrent Fever of Europe. (Spirillen d. europäischen Recurrensfiebers.) C. Fraenkel.
114 Atoxyl in Syphilis. O. Lassar.
115 *Effects of Heat and Cold on Viscosity of Blood. (Beeinflussung d. Viskosität d. Blutes.) Determann.
116 Apparatus for Measuring Blood Pressure. (Messung d. Blutdruckes.) H. J. Bing.
117 Id. H. Stillmark.
118 Disinfection with Gaseous and Steam-forming Substances. (Gas. u. Dampfförmigen Substanzen.) U. Friedemann.
119 *Treatment of Scarlet Fever. (Therapie d. Scharlach.) B. Schick.
120 Resistance of Mice to Tumors. (Geschwulstresistenz bei Mäusen.) M. Haaland.
121 *Artificial Radium Baths. (Radiumemanationshaltige Bäder.) A. Laqueur.
122 *Removal of Wax from Bladder. (Wachsklumpen i. d. Blase.) H. Lohnstein.
123 *Suprapubic Prostatectomy. C. Posner.
124 Carcinoma of Epidermis. (Epidermiscarcinom.) D. v. Hansemann.
125 Ernst von Bergmann. M. Borchardt.
126 Pernicious Anemia. (Perniciöse Anämie.) A. Plehn.
127 *Aggressiveness of Bacteria. (Bakterienagressivität). O. Bail.
128 Constitutional Lipomatosis. (Konstitutionellen Formen d. Lipomatosis.) H. Kisch.
129 *Cause of Fever. (Wärmebildung im Fieber.) E. Aronsohn.
131 *Abdominal Route in Hysterectomy for Carcinoma of Uterus. (Abd. Exstirpation d. carcinomatösen Uterus.) J. Veit.
132 *Diagnosis of Diseases of Pancreas. (Pankreaserkrankungen.) F. Eichler.
133 Acute Myeloid Leukemia. H. Hirschfeld.
135 Surgical Treatment of Ulcer of Stomach. (Mageneschwür). Hildebrandt.

104. **Physical Therapy of Headache.**—Riedel discusses the treatment of headache from the standpoint of physical therapy. In cases of hyperemic headache he advises absolute rest, with cold applications to the head and hot applications, or friction, to the lower extremities. Colonic flushings are also said to be of value, as well as active purgation. If the headache is of the paroxysmal variety, cold applications to the head, for a minute at a time, and walking in water at a temperature of from 8 to 10 C., for ten minutes at a time, act almost specifically. Naegele's manual head stretching is also warmly recommended. For headaches of anemic origin, the head is placed low and the scalp is massaged. Hot compresses applied to the forehead or the nape of the neck, and application of warmed cloths around the neck are also valuable. Massage is the most efficient treatment in cases of rheumatic headache. The hot-air douche and warm applications of various kinds may also be used. The same treatment is indicated in cases of neuralgic headache. The author places much reliance on the intelligent use of massage as a means of relieving such headaches, but emphasizes the fact that the physician himself must carry out the treatment, and that it can not be applied by rule of thumb, as it were.

106. **Sarason's Ozet Baths.**—These baths consist of the addition to the water of sodium hyperborate and manganese borate, the latter being spread in powder form over the surface of the water. In a few minutes oxygen begins to be liberated, and this continues for about fifteen minutes. The authors found that these baths diminish the blood pressure and lessen the frequency of the pulse in the majority of instances. In two cases of arteriosclerosis the blood pressure and pulse rate were increased materially and the patients suffered considerably from dyspnea and increased heart action. The cases in which the action was a favorable one included cases of cardialgia, tachycardia, neurasthenia, mitral insufficiency; two subjects were entirely normal.

108. **Refraction Coefficient of Blood Serum.**—Engel found a high refraction index in cases of diabetes mellitus and insipidus, pulmonary tuberculosis, chronic hypertrophic hepatitis, obstruction of the bile ducts and stricture of the esophagus. He concludes that this procedure is a most valuable one for the determination of hydremia and of the albumin content of the blood.

111. **Quinquaud's Sign.**—Minor holds that this phenomenon is probably a sign of muscle tire. It is not pathognomonic of alcoholism, and appears only rarely in exophthalmic goiter, paralysis agitans, arthritis deformans, and in hemiplegia, except in the late stages of the last named, when the sign is entirely absent, especially when contractures exist. The author found the sign to occur very frequently in tabes. It is regarded as being distinctly a pathologic phenomenon and is of neuromuscular origin.

115. **Effect of Heat and Cold on Blood Viscosity.**—Determann found that there is usually an increase in the viscosity of the blood after cold plunges and cold hand baths. Hot baths have the same effect, while warm baths decrease the viscosity.

119. **Treatment of Scarlet Fever.**—Schick consigns every patient with scarlet fever, no matter how slight in severity, to bed for four weeks, and during this time he is not given any meat. The diet consists of milk, milk foods, light farinaceous foods, bread, butter, soups not made of meat stock, honey and preserves. Cold packs control the fever. Antipyretics are condemned. Warm baths are not permitted until the fifth week. The body is anointed with vaselin or vaselin-lanolin during the stage of desquamation. If angina is severe, cold applications are made to the neck, and older patients are advised to gargle with a solution of from 1 to 2 per cent. hydrogen peroxid. Cold drinks are given when the angina is severe. In fact, the author's treatment consists, in the main, of non-medicinal therapy, except the use of peroxid. He says that complications and sequels are best avoided by such treatment. Under no circumstances is the patient permitted to leave the bed until one week after albumin has disappeared from the urine, and the author insists on making a daily temperature record until the sixth week of the disease.

121. **Artificial Radium Baths.**—Laqueur is of the opinion that much of the vaunted therapeutic value of mineral waters and earths used for therapeutic purposes is due to the emanations from or the radioactivity of such waters and earths. He believes that they should be given a trial in cases of chronic articular rheumatism and gout.

122. **Removal of Wax from Bladder.**—Lohnstein records the case of a man who attempted to secure relief from an intractable itching of the urethra by forcing into it some stearin taken from a candle. Some of this substance forced itself into the bladder and eventually caused a severe cystitis with hematuria. It was to secure relief from the cystitis that the patient presented himself for treatment. Cystoscopy disclosed the foreign material firmly attached to the bladder wall, and although it had been there for nearly six months, its surface was free from any incrustations. The lump of wax was of about the size of a walnut. Benzin was injected into the bladder, 40 c.c., in two injections, and this dissolved the wax, which was found to weigh almost 5 grams. The patient was at once relieved of all his symptoms. The procedure was repeated on the following day, but wax was passed only after the first injection. Cystoscopy revealed a normal bladder wall, and no subjective symptoms were present. The patient left the hospital on the second day.

123. **Suprapubic Prostatectomy.**—Posner operated successfully on a man who had been using a catheter for eighteen years. The prostate, which contained a calculus, was enucleated, and the patient, aged 76, made a complete recovery, regaining full control of his bladder.

127. **Aggressiveness of Bacteria.**—Bail says that any organism which multiplies in the animal body and thus infects it, must have the ability to paralyze the protective forces and to hold them at a distance. This power is termed bacterial aggressivity.

129. **Cause of Fever.**—Aronsohn says that the heat or "fire" of fever is generated in the muscles by the caloric or trophic nerves which take their origin in the heat center in the brain. The proteolytic ferments pour forth from the muscle plasma, and "the living strength of the biogen is transformed into heat."

131. **Abdominal Hysterectomy.**—Veit favors the abdominal route for extirpation of a carcinomatous uterus because it is not only safer primarily but secondarily; that is, the end results are better than those of vaginal extirpation. The primary mortality is now under perfect control because of perfected technic. He has operated on twenty patients without a death.

132. **Diagnosis of Diseases of Pancreas.**—Eichler urges that more frequent use be made of the so-called Cammidge reaction or test to determine the presence or absence of pancreatic disease. He produced pancreatic disease experimentally in three dogs, and the test was always positive in these three cases, while the reaction was never present in the urine of healthy animals.

Centralblatt f. Chirurgie, Leipsic.

136 (XXXIV, Nos. 15-26, pp. 417-776.) *Transplantation of Sartorius Muscle in Resection of Knee-joint. (Fixationsmittel bei Kniegelenksresektion.) S. Kofmann.
137 *Surgical Treatment of Torticollis. (Muskulären Schiefhalses.) W. Böcker.
138 *Id. Gerdes.
139 *Transplantation of Cartilage Plates in Joint Ankyloses. (Ueberpflanzung v. Knorpelplatten in Gelenkankylosen.) R. J. Weglowski.
140 Veronal-Chloroform Anesthesia. W. Pokotilo.
141 *Suture of Intestine. (Darmnaht.) J. Shoemaker.
142 *Suture of Patella. (Patellarnaht.) W. Kausch.
143 *Incision for Appendectomy. (Schnittführung.) A. Wertheim.
144 *Incision in Laparotomy. (Eroffnung d. Bauchhöhle.) P. J. Diakonow.
145 *Incision in Appendectomy. G. Schwalbach.
146 Thiersch Transplantation Method. K. Försterling.
147 *Substitute for Mesentery. (Ersatz d. Mesenteriums.) Lanz.
148 Operation for Ureteral Calculus. (Operationsmethode f. Steine im Ureter.) W. Bartlett.
149 Simple, Dry Disinfection of Skin. (Entkeimungsmethode d. Haut.) Wederhake.
150 Urinary Findings After Spinal Anesthesia with Stovain. (Urinbefunde n. Lumbalanästhesie mit Stovain.) A. Schwarz.
151 Retrocolic Cholecystenteroanastomosis. Brentano.
152 Etiology of Gangrene in Incarcerated Hernia. (Gangrän im eingeklemmten Bruch.) C. Lauenstein.
153 *Late Recurrence of Cancer of the Breast. (Spätrecidiv eines Mammakarzinoms.) E. Bircher.
154 Improved Ether Mask. (Verbesserte Aethermaske.) Longard.

136. **Transplantation of Sartorius Muscle.**—The method employed by Kofmann is really a modification of Heusner's method and that employed by Schanz in the treatment of fracture of the patella. The sartorius is implanted in the rectus femoris. In the case reported by the author the joint was resected, and owing to the looseness of the sartorius, this muscle was pulled outward over the rectus femoris and sutured in that position, without loosening its attachment to the tibia. The result was an excellent one. Kofmann also recommends this method in cases of paralysis of the rectus femoris.

137. **Surgical Treatment of Torticollis.**—Boecker has operated on 120 patients with torticollis, 90 times according to Mikulicz' method and 30 times according to Volkmann's method. The former method is preferred because of the uniformity of the results obtained finally in all cases operated on by this method.

138. **Id.**—Gerdes directs attention to the fact that the method of operation proposed by him absolutely prevents a recurrence of the torticollis, gives good cosmetic results, simplifies the after-treatment, and is easy of performance. It consists in severing the anterior scalenus muscle after the sternocleidomastoid has been cut. He claims that this method is superior to that of Mikulicz.

139. **Transplantation of Cartilage Plates.**—In a case of ankylosis of the elbow joint in which operation proved futile, Weglowski transplanted strips of cartilage, with the perichondrium intact, taken from the sixth and seventh ribs. The joint was resected, that is, the lower end of the humerus was removed, and the upper ends of the ulna and radius were properly prepared. The two pieces of cartilage were laid on the ends of the lower arm bones, with the perichondrium toward the humerus. They were retained in position by the ends of all the bones coming in contact. The wound was closed throughout and the arm placed in a plaster cast. The cast was removed on the tenth day, and active and passive movements were begun. After one month the arm could be bent to an angle of from 60 to 70 degrees and supination and pronation were normal. Unfortunately, the patient died in the fifth week from pleuropneumonia. At the necropsy the pieces of cartilage were found to be not only intact, but the plates had become firmly adherent to the lower end of the humerus, and there was an intimate connection between the bone and the cartilage by means of new-formed blood vessels. The ends of the radius and ulna were smooth and shining.

141. **Suture of Intestine.**—Schoemaker prefers the end-to-end anastomosis and overcomes the objections raised to the method by first covering the portion of intestine denuded of serosa with serosa by means of two buttonhole sutures, and then uniting the ends of the intestine with a continuous suture. These two sutures are placed as though it was intended

to close the lumen of the bowel. On one side the sutures are cut off short; on the opposite side they are left long to serve as a running stitch. In 10 cases the method proved itself superior to other methods.

142. **Suture of Patella.**—Kausch makes a curved incision with the convexity upward because in case of stitch-hole abscess, it does not then lie directly over the sutured patella, and the scar, likewise, is sufficiently removed from that in the patella to obviate any untoward bad after effects. Three or four wire sutures, either aluminum bronze or silver wire, are employed, one of these sutures passing through the entire thickness of the patella. For the remaining sutures the holes are bored on a slant so as not to have the suture pass beyond the inner wall of the bone. If the lower segment is very small, the wire is passed around the bone, encircling the lower edge of the fragment. The periosteum and fascia are sutured over the bone, and finally the soft parts are sutured with silkworm gut. Before the skin wound is closed the author flexes the knee in order to test the wire sutures. Massage is begun the day following the operation, and passive movements on the third day. On the tenth day the skin sutures are removed and on the fourteenth day the patient is allowed to stand. His results have always been excellent.

143. **Incision for Appendectomy.**—Wertheim describes the modification of Wier's incision devised by his late chief, Krajewski, and employed by him for eight years.

144. **Id.**—Diakonow recommends Bogojawlenski's incision for appendectomy. It is very similar to that employed by Wier.

145. **Id.**—Schwalbach claims to have practiced the McBurney incision since 1903 without having had any knowledge of McBurney's priority.

147. **Substitute for Mesentery.**—In a number of instances in which the intestine was denuded of its mesentery, Lanz has made use of the omentum with good results. The omentum is sutured over the intestine and thus provides the latter with a covering that fully replaces its natural one.

153. **Recurrence of Cancer of Breast.**—Bircher reports the case of a man who was operated on for carcinoma of the breast in 1890. The diagnosis was confirmed microscopically. The breast was removed, and with it the underlying pectoralis major muscle. The ribs were found to be not involved. The axilla was cleaned out completely. Fourteen years after the operation the patient complained of pain in the side operated on. Within three weeks he sought medical advice, and it was then determined that there was a recurrence of the original tumor in the scar. Later symptoms manifested themselves that indicated metastasis in the liver. Operation was refused. The microscopic examination at both times showed a carcinoma simplex. On this finding is based the author's assumption of a recurrence and metastasis.

Monatshefte f. Praktische Dermatologie, Hamburg.

155 (XLV, Nos. 1-3, pp. 1-176.) Case of Adenoma Sebaceum. F. Krzysztalowicz.
156 Technic of Intramuscular Injections of Mercury. (Intramuskulären Hg-Einspritzung.) A. v. Karkowski.
157 Case of Xeroderma Pigmentosum. K. Vignolo-Lutati.
158 Effect of Electrostatic Treatment on the Vasomotors of the Skin. (Effect elektrostatischen Beh. a. d. Haut-Vasomotoren.) F. Winkler.
159 Pulmonary Tuberculosis and Diseases of the Skin. (Lungenschwindsucht u. Hautkrankheiten.) S. Beck.
160 Genesis of Epidermal Pigment. (Genese d. Epidermispigmentes.) W. Hellmich.

Archiv f. Verdauungs-Krankheiten, Boas', Berlin.

161 (XIII, No. 3, pp. 223-328.) Phosphorus Metabolism in Intestinal Mucous Membrane during Fasting and after Feeding. (Phosphorverbindung i. d. Darmschleimhaut.) A. Ferrata and G. Moruzzi.
162 Vegetable or Meat Diet in Hyperacidity. (Hyperacidität.) O. Schloss.
163 Advantages and Disadvantages of Currant Test. (Korinthenprobe.) H. Schmilinsky.
164 Diagnosis and Surgical Treatment of Hour-Glass Stomach. (Sanduhrmagen.) H. Schmilinsky.
165 Significance of Flagellates in Feces in Achylia Gastrica. (Flagellaten i. Stuhl.) J. Wasserthal.
166 The Abdominal Muscles in Diagnosis. (Weichen u. steifen Leib.) Benderski.
167 Relation of Ulcers and Erosions of Stomach to Functional Disturbances of Intestine. (Functionellen Störungen d. Darmes.) W. Plönies.
168 New Instrument for Gastroscopy. (Gastroskopie.) F. Ehrlich.

Gazzetta degli Ospedali, Milan.

169 (XXVIII, Nos. 85-89, pp. 882-928.) *The Salts of Magnesia in Epilepsy. (Sali di Magnesia nell' Epilessia.) E. Calcaterra.
170 Experimental Observations on Diplococcus Aggressin. (Aggressine diplococcica). A. Barlocca.
171 *Albumosuria in Infectious Diseases. (Albumosuria.) A. Giovine.
172 Sphygmomanometric Technic. (Tecnica sphigmomanometrica.) C. Rubino.
173 Some Infections Resembling Typhoid. (Su alcune infezioni tifosimili.) G. Rocchi.
174 *Dercum's Disease. (Sul morbo di Dercum.) G. Fratti.
175 Tobacco and the Genital Functions in Man. (Tabagismo e funzioni genitali nell' uomo.) S. Cannata.
176 Importance of Certain New Methods of Investigation in Surgical Diseases of the Kidney. (Studio delle malattie chirurgiche del rene). G. Gualdrini.

169. **Magnesium Salts in Epilepsy.**—Calcaterra experimented on a number of epileptics with the hypodermic administration of magnesium sulphate, also using $MgCl_2$ with good results in checking the attacks. These salts, he thinks, have a double action as inhibiters of epileptic manifestations: 1. There is a direct action of the ions on the abnormally functioning nervous elements. 2. They tend to disintoxicate and to render the serum normal and perhaps also the organic fluids generally. He is carrying on studies to elucidate further the mode of action of these salts.

171. **Albumosuria in Infectious Diseases.**—Using Fittipaldi's method, which avoids any confusion with albumin, Giovine has tested the urine for albumosuria in a number of infectious diseases (measles, diphtheria, typhoid, pneumonia, tuberculosis, meningitis, etc.) and finds it a rather frequent symptom, thus agreeing with the results of other investigators using other tests. He found it present in 68 per cent. of the cases examined, and it was marked in 23 per cent. Its constancy in diphtheria and its presence in typhoid and fevers of intestinal intoxication were notable, while its absence in pulmonary tuberculosis, even with large cavities, was also noteworthy. It was also lacking or doubtful in a case of cerebrospinal meningitis, and this may have some diagnostic importance.

174. **Dercum's Disease.**—Fratti reports a case of Dercum's disease (adiposis dolorosa) presenting some noteworthy features. The patient was a young woman, aged 28, without inherited taint, and the disorder began with articular pains which led to a diagnosis of rheumatism. While the thyroid was apparently normal, there were symptoms suggesting exophthalmic goiter—slight exophthalmos, tachycardia to a slight extent, vasomotor disturbances, flushes of heat in the face and perspirations. Fratti rather inclined to exclude alcoholism as a causative factor in this case; the patient took habitually a liter of wine and sometimes a liter and a half, but no strong liquors. Other symptoms noted were the asthenia, psychic disturbances, melancholia, etc., insomnia, nervous irritability, and a hypertrichosis appearing with the disease on the chin and upper lip, the face not being involved in the adiposis. The patient succumbed to an afebrile bronchial catarrh after leaving the hospital; no autopsy was made.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interest of our readers.

TEXT-BOOK OF PHYSIOLOGY for Medical Students and Physicians by William H. Howell, Ph.D., M.D., LL.D., Professor of Physiology in the Johns Hopkins University, Baltimore. Second Edition, Thoroughly Revised. Cloth. Pp. 939. Price, $4.00 net. Philadelphia and London: W. B. Saunders Co., 1907.

INDEX-CATALOGUE of Medical and Veterinary Zoology, Parts 17, 18 and 19. Ch. W. Stiles, Ph.D., Consulting Zoologist of Bureau of Animal Industry and A. Hassall, M.R.C.V.S., Assistant in Zoology, Bureau of Animal Industry. Paper. Washington: Government Printing Office, 1907.

INDEX-CATALOGUE of the Library of the Surgeon-General's Office, United States Army. Authors and Subjects. Second Series. Vol. XII. Cloth. Pp. 978. Washington: Government Printing Office, 1907.

TRANSACTIONS OF THE NEW HAMPSHIRE MEDICAL SOCIETY at the One Hundred and Sixteenth Anniversary, held at Concord, May 16 and 17, 1907. Cloth. Pp. 293. Concord: Rumford Printing Co., 1907.

ELEVENTH ANNUAL REPORT of the Macon Hospital, Macon, Georgia, to the Board of Directors at the Annual Meeting, held Jan. 20, 1907. Paper. Pp. 16.